

MONTHLY WEATHER REVIEW.

VOL. XX.

WASHINGTON, D. C., AUGUST, 1892.

No. 8.

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INTRODUCTION.

This REVIEW is based on reports for August, 1892, from 2,834 regular and voluntary observers. These reports are classified as follows: 164 reports from Weather Bureau stations; 47 reports from United States Army post surgeons; 1,889 monthly reports from state weather service and voluntary observers; 221 reports through the Central Pacific Railway Company;

484 marine reports through the co-operation of the Hydrographic Office, Navy Department; 29 reports from Canadian stations; marine reports through the "New York Herald Weather Service;" monthly reports from local weather services established in all states and territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR AUGUST, 1892.

The warm wave of the first decade and the cool wave of the latter part of the month were prominent features of August, 1892. From the 3d to the 9th the crest of a warm wave of unusual persistence and intensity traversed the country from the northeast slope of the Rocky Mountains to the middle Atlantic and New England coasts. In central and eastern districts the heat of this period was less intense than that experienced during the third decade of August. Following closely the heated spell of the preceding month it was, however, severely felt in the northern and central states, and in localities where there was a marked deficiency in rainfall vegetation was scorched. The cool wave of the latter part of the month overspread the northern Rocky Mountain and plateau regions on the 27th and 28th, reached the Mississippi and Red River of the North valleys on the 30th, and occupied the Ohio Valley and Lake region at the close of the month. This cool wave was attended by minimum temperatures below 40° in Wyoming, eastern South Dakota, and the Red River of the North Valley, and frost from New Mexico and Colorado over Nebraska, the Dakotas, northern Iowa, Minnesota, and northwestern Wisconsin.

The month was exceptionally dry in the District of Columbia, and generally in Maryland and Virginia. In a number of the Western States drought was broken by general rains on the 9th.

TEMPERATURE.

The month was warmer than usual save on the northeast slope of the Rocky Mountains, along the middle and south Pacific coasts, in the southwestern states, and along the Saint Lawrence River. The greatest excess in temperature was reported in Virginia and Upper Michigan, where it was 3° to 4°, and the most marked deficiency was noted in northern Louis-

iana and central Texas, where the mean temperature was 2° to 3° lower than the average for August.

PRECIPITATION.

The monthly precipitation was generally deficient, except from the lower lakes over New York, New England, and the Canadian Maritime Provinces, in northern Georgia, the middle and west Gulf states, and in areas between the Mississippi River and the Rocky Mountains. The greatest excess in precipitation was noted in parts of the Canadian Maritime Provinces, New England, and New York, where it was 2.00 to 4.00 inches, and at points in Maine, northeastern New York, Alabama, Texas, Nebraska, and Idaho the amount was the greatest ever reported for August. The most marked deficiency in precipitation was shown in the Atlantic coast states south of Pennsylvania, where it was 2.00 to 4.00, and in the District of Columbia and at stations in South Carolina, Missouri, New Mexico, Utah, and Oregon the monthly precipitation was the least on record for August.

STORMS.

The occurrence of local storms was noted most frequently in Kansas, Minnesota, Illinois, New York, Massachusetts, and Florida, where they were reported on five to six days during the month. Local storms were reported over the greatest extent of territory on the 8th, when they occurred in South Dakota, Minnesota, Iowa, Arkansas, Wisconsin, Lower Michigan, Ohio, and West Virginia. On the 7th storms were noted in New York and New England. On the 11th heavy thunder, rain, and hail storms occurred generally throughout New England, and in New Jersey and Tennessee. Heavy rains and high winds prevailed along the New England coast on the 26th and 27th. On the 30th destructive gales caused loss of life and considerable damage to shipping on the upper lakes.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for August, 1892, as determined from observations taken daily at 8 a. m. and 8 p. m. (75th meridian time), is shown on Chart I by isobars.

The normal pressure for August is highest over districts

lying south of the Lake region and east of the Mississippi River, and along the Pacific coast between the 40th and 50th parallels, where it is above 30.00; it is lowest over the west part of the southern plateau region, where it is below 29.80.

In August there is usually an increase of pressure over the

United States, save over the Southern and Pacific coast states. The greatest increase of normal pressure occurs over New England, where it exceeds .05, and the most marked decrease is shown over the Florida Peninsula, where it averages about .05.

In August, 1892, the mean pressure was highest over the south Atlantic states and the Florida Peninsula, and along the Washington coast, where it was above 30.05. It was above 30.00 south of the 45th parallel and east of the 95th meridian, and along the Pacific coast north of the 40th parallel. The mean pressure was lowest in the lower Colorado valley, where it was below 29.80, and the mean values were below 29.90 over the west parts of the middle and southern plateau regions, in the central valleys of California, and from eastern Montana and western Dakota over the middle and eastern Saskatchewan valleys.

A comparison of the pressure chart for August, 1892, with that of the preceding month shows a general decrease of pressure, except over New England and the Rocky Mountain and eastern plateau regions. The most marked decrease is shown over the Florida Peninsula, where it is .10, and in districts south of the Lake region and east of the Mississippi River, and along the Pacific coast between the 35th and 45th parallels, the decrease is more than .05. The greatest increase of pressure is noted over New Brunswick and eastern Quebec, where it is .05 to .10, and the increase exceeds .05 in the middle Saskatchewan valley.

The mean pressure was generally above the normal, a slight departure below the normal being shown only over the middle Atlantic states, and in areas in the northern lake region, the lower Ohio, lower Mississippi, and middle and upper Missouri valleys, and over the east part of the southern plateau region. The greatest departure above the normal pressure was noted over New Brunswick, eastern Florida, and on the extreme north Pacific coast, where it exceeded .05.

HIGH AND LOW AREAS.

The paths of areas of high and low pressure over the United States and Canada during August, 1892, are shown on Charts IV and I, respectively, and some of the prominent characteristics of the areas are given in the table at the end of this chapter.

HIGH AREAS.

Seven high areas appeared, the average number traced for August during the last 17 years being 5.8. Of the high areas traced for the current month one occupied the middle Missouri and extreme upper Mississippi valleys at the opening of the month, 3 advanced from the British Northwest Territory, one developed in the middle Missouri valley, and 3 appeared on the north Pacific coast. The high areas from the British Northwest Territory and the north Pacific coast moved southeastward to the central valleys and the Lake region, 2 passing thence southeastward to the Atlantic coast, and one moving to Nova Scotia, one disappeared north of the Saint Lawrence Valley, and one occupied the Lake region at the close of the month. A notable feature was the persistence and slow rate of advance of the high areas over the Lake region. The following is a description of the high areas referred to:

I.—At the opening of the month this high area extended from eastern Nebraska to the Red River of the North Valley and Lake Superior, with pressure 30.16 at Omaha, Nebr., and Moorhead, Minn. By the evening of the 2d the area had moved eastward and southeastward and covered the upper Ohio valley and the Southern States, and during the 3d the center passed off the south Atlantic coast. The advance of this high area was unattended by marked temperature changes, save on the 1st, when there was a fall of 10° to 12°, attended by rain, from the upper Lake region to the Gulf States.

II.—Appeared over the Red River of the North Valley the morning of the 3d, and the morning of the 4th was central over the upper Mississippi valley, with pressure 30.10. Moving eastward over southern Lake Michigan the high area passed thence off the south Atlantic coast by the evening of

the 5th. The advance of this high area was attended by a fall in temperature of 5° to 10° and areas of rain from the Missouri Valley to the middle Atlantic and New England coasts.

III.—Was central over western Lake Superior the morning of the 11th, and extended thence over the upper lake region during the 12th, with pressure above 30.20. The center shifted position to northern Lower Michigan by the morning of the 13th, and during the succeeding 24 hours apparently moved westward over the extreme upper Mississippi valley. During the 15th the high area drifted eastward and formed a ridge of high pressure which extended from the upper lake region to the Carolina coast. Passing southeastward the center moved off the Virginia coast. On the 11th the temperature fell 5° to 10° in the Ohio Valley and Tennessee and the lower lake region, and on the 12th a temperature fall of 5° to 11° occurred in the Atlantic coast states, the cooler weather being attended by rain in the districts referred to. The lowest temperature of the month was noted in Virginia on the 13th, in Tennessee, North Carolina, and West Virginia on the 14th, in the District of Columbia on the 15th, and in northern Georgia on the 17th.

IV.—Occupied the north Pacific coast the morning of the 17th, with pressure above 30.30, passed thence to Nebraska by the evening of the 18th, and thence to eastern Upper Michigan by the evening of the 19th, after which it disappeared north of the region of observation. On the 16th the temperature fell 10° to 14° on the northeast slope of the Rocky Mountains, and the lowest temperature of the month, 48°, was noted at Tatoosh Island, Wash. On the 17th a temperature fall of 10° to 22° occurred over Montana and the Dakotas, and the lowest temperature of the month was reported at Roseburg and Baker City, Oregon. The cooler weather extended over the Lake region during the 18th and 19th, and over New England by the 20th, the temperature fall being attended by rain. On the 20th the first light frost of the season was noted at Sault Ste. Marie, Mich.

V.—Was central over the Saskatchewan Valley the morning of the 20th, with pressure above 30.20. By the evening of the 20th the center had moved over eastern Montana, and during the 21st it passed to Minnesota. The evening of the 21st this high area occupied New England, the middle Atlantic states, and the eastern lake region, and the morning of the 23d was central over New England, with pressure above 30.30, from which position it moved eastward over Nova Scotia. On the 20th the temperature fell 10° to 12° on the eastern slope of the Rocky Mountains. On the 21st a fall of 5° to 10° was noted in the Southwest. A similar fall was reported in the south Atlantic states on the 22d, and cooler weather, attended by rain areas, reached the middle Atlantic coast on the 23d.

VI.—Apparently developed over the middle Missouri valley the night of the 24–25th, and during the 26th and 27th advanced eastward over the upper lake region. During the 28th the high area remained nearly stationary over the lower lake region, with pressure rising above 30.20, and during the 29th passed southeastward off the New England coast. Attending this high area the temperature fell 5° to 16° in the middle Mississippi valley on the 24th, 5° to 10° from the lower lakes to Texas on the 25th, 5° to 10° in the middle and south Atlantic states on the 26th, and 5° to 10° in New England on the 27th. On the 28th and 29th the lowest temperature of the month was noted at points in the lower lake region and the Atlantic coast states north of Virginia. The temperature fall caused by this high area was attended by rain.

VII.—Occupied the north Pacific coast the morning of the 27th, with pressure above 30.20, passed thence southeastward to Indian and Oklahoma territories by the 30th, with pressure 30.28 over Colorado on the 29th, and at the close of the month was central over Illinois. This high area was attended by the most important cool wave of the month. On the 26th the temperature fell more than 20° in the Saskatchewan Valley. On the 27th the temperature fall exceeded 20° on the northeast slope of the Rocky Mountains, and from the 27th to 29th

the lowest temperature of the month was noted in the northern Rocky Mountain and plateau regions. On the 28th the temperature fell 20° to 30° on the middle-eastern slope of the Rocky Mountains and in the middle Missouri valley. On the 29th the temperature fall was 10° to 20° from western Lake Superior to Texas, and the first light frost of the season, with minimum temperature 33°, was noted at Lander, Wyo. Light frost was also reported in parts of Nebraska and Colorado. On the 30th the temperature fell 10° to 20° in the western lake region and the Mississippi Valley, the lowest temperature of the month occurred at points in the Red River of the North and middle Missouri valleys, and light frost was noted in parts of North and South Dakota and northwest Iowa. On the 31st the temperature fell 5° to 16° from North Carolina over the eastern lake region and New England, the lowest temperature of the month was noted over the western and southern lake regions, and light frost was reported in northern Iowa and at Florence, Wis. The temperature fall attending this high area was attended by rain in the northern districts from the Pacific to the Atlantic coasts.

LOW AREAS.

The low areas of August advance eastward over the United States at an average velocity of 26 statute miles per hour. They generally develop on the eastern slope of the Rocky Mountains, and the tracks of the low areas which pass east of the Mississippi River are usually somewhat farther south than in June and July. Low areas from the interior of the country generally advance over the Lake region and Saint Lawrence Valley, and seldom pass south of the Ohio River. August marks the height of the West India cyclone season, and in August of preceding years some of the more destructive storms of this class have recurred over the southeastern part of the United States.

The tracks of 8 areas of low pressure are plotted on Chart I, the average number traced for August during the last 19 years being 9.8. Of the low areas traced for the current month 6 appeared over the western Saskatchewan valley, and 2 developed in the lower Missouri valley. Two of the low areas from the Saskatchewan Valley advanced eastward to the Gulf of Saint Lawrence region, one passed southward to the middle-eastern slope of the Rocky Mountains, and 3 moved southeastward over the Missouri Valley, and thence over the upper lakes. The low areas from the Missouri Valley moved over the Lake region, and thence off the southern New England coast. A West India cyclone of marked strength advanced from the Windward Islands to Nova Scotia from the 16th to 22d. This storm recurred between Bermuda and the Carolina coast. It is given a description under "North Atlantic storms." The following is a description of the low areas traced:

I.—Occupied the western Saskatchewan valley at the opening of the month, with pressure below 29.80, and moved slowly eastward with increasing energy by the evening report. The pressure gradient to the eastward of the center became marked, high westerly winds prevailed over Montana, and the highest temperature of the month was noted over the west part of the middle plateau region. During the 2d the center of disturbance advanced north of Lake Superior, with an appreciable loss of strength, and a secondary disturbance developed over the middle Missouri valley, rain fell during the early morning in the Red River of the North Valley, the highest temperature of the month was noted in parts of the northern and southern plateau regions, high southerly to westerly wind squalls occurred from the middle Missouri valley to Manitoba, and thunderstorms were reported in the northern Lake Superior region. During the 3d the center passed to the region north of Lake Ontario, with thunderstorms in the Lake region, and rain on the New England coast. By the evening of the 4th the storm-center had advanced north of the Gulf of Saint Lawrence, thunderstorms were reported in Vermont and western Massachusetts, and rain fell in the lower lake region and the Saint Lawrence Valley.

II.—Appeared north of Montana on the 3d, with pressure

below 29.60 at the evening report. On this date the highest temperature of the month was noted at Pueblo, Colo., and rain fell in western Montana and the middle Missouri valley. Moving slowly south of east the center of disturbance reached northern North Dakota the night of the 4th, the highest temperature of the month was noted in North Dakota, scattered showers occurred from Lake Superior to Montana, and thunder and hail storms were reported in Minnesota. Passing almost due eastward this storm disappeared north of the Gulf of Saint Lawrence the night of the 6th. On the 5th a subsidiary development appeared over the lower Missouri valley, rain fell generally from the upper Mississippi valley and the Great Lakes to the middle Atlantic and New England coasts, thunderstorms were reported from Minnesota to Maine, and the highest temperature of the month was noted in northwestern Texas. On the 6th rain fell in the lower lake region and northern New England, and heavy hailstorms were reported in New Hampshire.

III.—Was central north of Montana the evening of the 5th, with pressure below 29.70, and moved thence slowly to northwestern North Dakota by the evening of the 6th, with areas of light rain in the middle and upper Missouri valleys. On the 5th the maximum temperature at Dodge City, Kans., 103°, was the highest ever noted at that station in August, and on the 6th the highest temperature of the current month occurred from the west Gulf states to the lower Missouri valley. During the 7th this low area increased in strength, and at the evening report was central over South Dakota, with pressure below 29.60. On this date destructive local storms were reported in southern Minnesota and South Dakota, rain fell in the north-central districts, and the highest temperature of the month was noted in the lower Mississippi valley.

On the 8th the center advanced to eastern Lake Superior, rain fell from Colorado over the upper lake region, thunderstorms were reported in the Ohio and upper Mississippi valleys and the upper lake region, and the highest temperature of the month was noted in the Ohio and upper Mississippi valleys. By the night of the 9th the storm-center had moved eastward over northern New England and New Brunswick, rain fell in areas from the middle and upper Mississippi valleys to the Atlantic coast, thunderstorms were reported in the lower lake region, northern New York, and western New England, and the highest temperature of the month was noted in the eastern lake region.

IV.—Originated over the middle Missouri valley on the 9th, with rain from the middle and upper Mississippi valleys to the Rocky Mountains, and thunderstorms in Iowa, Missouri, and eastern Kansas. During the 10th the center moved north of the lower lake region, rain fell generally over the eastern half of the country, thunderstorms occurred in western New England, eastern New York, and northwestern and eastern Pennsylvania, and the highest temperature of the month was noted in the middle Atlantic and New England states. During the 11th the center of disturbance moved slowly southeastward over northern New York, with rain from New England to the southwestern states, thunderstorms in New England and New Jersey, and the highest temperature of the month in the south Atlantic states. On the 12th the center passed southeastward off the New England coast, the rain area contracted eastward over New England, New York, and Pennsylvania, thunderstorms occurred in New Hampshire and Massachusetts, and the highest temperature of the month was noted in eastern Florida.

V.—The evening report of the 11th showed this low area central over Alberta, with pressure below 29.40, and rain and high winds on the northeast slope of the Rocky Mountains. The center of disturbance moved slowly eastward during the 12th, with rain in areas from Montana over the middle Missouri and Red River of the North valleys, and thunderstorms in Minnesota, Iowa, and Kansas. During the 13th the low area moved southward over the Dakotas and apparently disappeared by an increase of pressure on the middle-eastern

slope of the Rocky Mountains. On this date rain fell in areas from southern Minnesota to northwestern Texas, high northwest winds prevailed in South Dakota, heavy wind, rain, and thunderstorms occurred in eastern Kansas, and thunderstorms were reported in northwestern Texas.

VI.—Developed in the Saskatchewan Valley on the 14th, and at the evening report was central north of eastern Montana, with pressure below 29.70. On this date high wind and thunderstorms were reported in South Dakota. On the 15th the center advanced to western South Dakota, without evidence of marked strength, and remained nearly stationary over South Dakota during the 16th and 17th, with rain in the Dakotas, and the highest temperature of the month over the middle plateau region and on the northeast slope of the Rocky Mountains. During the 18th the storm-center moved north of Lake Superior, with a slight increase in energy, and from the 16th to the 18th the highest temperature of the month was recorded in the upper lake region. By the evening of the 19th the center had advanced to the region north of the lower Saint Lawrence valley, with showers from the Ohio Valley over the lower lakes and western New England, and thunderstorms in the Ohio Valley, and thence over western New York and northwestern Pennsylvania.

VII.—Apparently developed over the lower Missouri valley on the 23d. On this date rain fell between the Mississippi River and the Rocky Mountains, in the upper lake region, and the Southern States. On the 24th this low area moved to the western lower lake region, rain fell generally from the Mississippi River over the Lake region and the middle and south Atlantic states, and thunderstorms were reported in the southern lake region. By the evening of the 25th the center had

advanced to eastern New York, with rain from the Lake region to the middle Atlantic and New England coasts, the rainfall being unusually heavy in northern and western New York. The morning report of the 26th showed the low area central off the New Jersey coast, the abnormal southerly movement being due to high pressure to the eastward, and by the evening of that date the center had apparently been forced southward off the Virginia coast. Rain fell from the lower lakes to the middle Atlantic and New England coasts, and brisk to high northeasterly winds prevailed along the New England coast during that and the succeeding date.

VIII.—Was central over the eastern Saskatchewan valley the morning of the 26th, with pressure below 29.70, and rain in northeastern Montana. During the 27th the center advanced to South Dakota, with pressure falling to 29.60, and rain in the extreme northwest. By the evening of the 28th the center of disturbance had passed to southwestern Kansas. On this date rain fell over a large part of the region between the Mississippi River and the Rocky Mountains, and thunderstorms were reported in the west Gulf states and Kansas. During the 29th the low area moved northeastward to the upper Mississippi valley, rain fell in areas in the central valleys, and thunderstorms were reported in the lower Missouri and upper Mississippi valleys. During the 30th the storm-center passed over the upper lake region, rain fell between the Mississippi River and the Alleghany Mountains, and destructive gales prevailed over the upper lakes. By the evening of the 31st the center of disturbance had reached the lower Saint Lawrence valley, the rain area had passed east of the Alleghany Mountains, and thunderstorms were reported in New Jersey and North Carolina.

Tabulated statement showing principal characteristics of areas of high and low pressure.

Barometer.	First observed.			Last observed.			Duration.	Velocity per hour.	Maximum pressure change in 12 hours, maximum abnormal temperature change in 12 hours, and maximum wind velocity.											
	Date.	Lat. N.	Long. W.	Lat. N.	Long. W.				Station.	Rise.	Date.	Station.	Fall.	Date.	Station.	Direction.	Miles per hour.	Date.		
High areas.							Days.	Miles.		Inch.										
I.....	1	43	95	37	83	2.0	21		White River, Ont.....	.20	1	Columbus, Ohio.....	13	1	Vicksburg, Miss.....	ne.	26	1		
II.....	3	48	97	39	82	2.0	24		Winnipeg, Man.....	.26	2	North Platte, Nebr.....	17	3	Kittyhawk, N. C.....	w.	14	5		
III.....	11	48	93	38	79	6.0	19		White River, Ont.....	.20	12	Atlanta, Ga.....	11	16	Sioux City, Iowa.....	n.	38	14		
IV.....	17	49	125	47	80	3.0	35		do.....	.46	19	Miles City, Mont.....	24	17	Chicago, Ill.....	ne.	36	19		
V.....	20	52	112	45	71	3.0	31		Sydney, C. B. I.....	.34	22	Rapid City, S. Dak.....	18	20	Kittyhawk, N. C.....	se.	36	23		
VI.....	25	43	95	41	66	5.0	17		Father Point, Quebec.....	.30	26	Rochester, N. Y.....	13	25	Charleston, S. C.....	nw.	20	28		
VII.....	27	48	124	41	89	4.5	22		Helena, Mont.....	.34	27	Denver, Colo.....	23	28	Pensacola, Fla.....	ne.	36	31		
									Sault Ste. Marie, Mich.....	.34	31									
Mean.....							3.6	24		.30			17					29		
Low areas.										Fall.			Rise.							
I.....	1	54	113	51	65	3.5	26		Minnedosa, Man.....	.42	1	Rapid City, S. Dak.....	20	1	Prince Albert, N. W. T.....	w.	36	1		
II.....	3	52	113	50	64	3.0	33		Calgary, N. W. T.....	.36	3	Calgary, N. W. T.....	21	2	Chicago, Ill.....	s.	36	5		
III.....	5	51	113	47	67	4.0	26		do.....	.46	5	Havre, Mont.....	22	5	do.....	s.	40	8		
IV.....	9	46	90	42	69	2.5	19		Nantucket, Mass.....	.22	12	Columbus, Ohio.....	7	9	Dubuque, Iowa.....	w.	44	9		
V.....	11	51	114	46	102	1.5	26		Fort Buford, N. Dak.....	.24	11	Havre, Mont.....	24	10	Oklahoma, Okla.....	ne.	54	13		
VI.....	14	52	107	51	69	5.0	19		Medicine Hat, N. W. T.....	.32	13	do.....	24	15	Havre, Mont.....	ne.	52	14		
VII.....	23	40	93	36	73	3.0	21		Oswego, N. Y.....	.24	25	Boston, Mass.....	7	24	Block Island, R. I.....	ne.	48	26		
VIII.....	26	53	105	50	68	5.5	26		Marquette, Mich.....	.28	30	Miles City, Mont.....	12	26	Amarillo, Tex.....	n.	42	29		
Mean.....							3.5	25		.32			17					44		

NORTH ATLANTIC STORMS FOR AUGUST, 1892 (pressure in inches and millimeters; wind-force by Beaufort scale).

The paths of storms that appeared over the west part of the north Atlantic Ocean during August, 1892, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

The north Atlantic normal pressure for August is highest in an area extending from the Azores south of west to the 48th meridian, where it is above 30.20 (767); it is lowest in an area extending from Iceland northeastward over Jan Mayen, where it is below 29.70 (754). There is usually a decrease of pres-

sure over the north Atlantic in August, a slight increase being shown only from the Banks of Newfoundland to the New England and middle Atlantic coasts and over Greenland. The most marked decrease in normal pressure occurs over eastern mid-ocean from the 10th to the 60th parallels, where it is more than .05 inch, and the increase exceeds .10 inch over northern Greenland.

The storms of August usually pass eastward over the ocean in high latitudes, and are seldom severely felt along the trans-Atlantic steamship routes. The storms of this month have an average velocity of 19 statute miles per hour, and an average

of less than 2 storms per month traverse the ocean from coast to coast in August. In the West Indies August marks the height of the cyclone season, and records of past years show that storms of this class have averaged about 2 per month in August. These storms generally recurve in the longitude of the western Bahamas, but in a number of instances have advanced over the Gulf of Mexico and the Southern States, attended by enormous loss of life and property.

The most important storm of the current month was the West India cyclone which advanced from the Virgin Islands, West Indies, to Newfoundland from the 16th to the 22d. This storm recurved east of the Bahamas, and passed west of Bermuda, its influence extending to the coast of the United States only in the form of high tides and heavy surf from the Carolinas to New Jersey. Two storms, low areas II and IV, traversed the ocean from coast to coast, the period of transit being in each instance 5 days. The influence of the West India cyclone referred to was also felt over the northern part of the British Isles from the 25th to the 28th.

The month opened with high pressure and fine weather from coast to coast. These conditions continued until the 5th, when low area I passed north of the Gulf of Saint Lawrence. This storm was followed the night of the 6th by low area II, which reached northern Newfoundland the morning of the 7th. On the 8th this storm occupied the region north of the Banks of Newfoundland, and by the 9th had advanced to the 40th meridian in high latitudes. Moving slowly eastward the storm-center reached the ocean west of Ireland on the 12th, with pressure below 29.70 (754). On the 13th pressure below 29.20 (742) and west gales of force 8 were reported east of the 25th meridian, and on the 14th west to northwest gales of force 8 to 10 were encountered between the 10th and 15th meridians. During the 15th this storm passed north of the British Isles.

The afternoon of the 16th the weather was threatening at Saint Thomas, W. I., and the barometer fell to 29.80 (757), a fall of .22 inch in 48 hours. At 7 a. m. of the 17th the barometer at Saint Thomas stood at 29.80 (757), with west wind and heavy rains. A report from Tortola stated that the cyclone passed that place at 9 a. m. During the 18th and 19th the storm recurved east of the Bahamas, and at 5 p. m. of the latter-named date the barometer had fallen to 29.91 (760), with southeast wind of force 4 at Bermuda. During the early morning of the 20th the center of disturbance moved northward west of Bermuda. At that station the barometer fell to 29.71 (755) from 4.30 to 6 a. m., with southwest wind of force 8. Moving thence north-northeast the storm-center reached Newfoundland on the 22d, attended by northwest to north gales of hurricane force along the trans-Atlantic steamship routes between the 50th and 65th meridians. Moving eastward over the ocean in high latitudes this storm apparently passed north of Scotland on the 25th.

The following extracts from the reports of shipmasters indicate the character of this storm: August 15th, German s.s. "Francia," in N. 26° 23', W. 54° 16', wind southeast, force 4 to 8, barometer 30.16 (766) to 30.08 (764), heavy sea and swell from southeast to south; 16th, in N. 21° 39', W. 57° 22', wind southeast to south, force 4, barometer 30.12 (765) to 30.08 (764), heavy swell and sea, shipped much water; 17th, in N. 21° 39', W. 60° 07', wind southeast, force 4 to 9, barometer 30.04 (763), heavy sea, ship labored heavily, shipping much water, wind shifted to south and southwest; 18th, in N. 19° 15', W. 61° 52', wind south, force 3 to 6, barometer 30.12 (765), heavy south to southwest sea moderating.

The British s.s. "Duart Castle" left Bermuda for Saint Thomas the morning of the 16th, with light south-southeast wind; 17th, in N. 27° 48', W. 65° 42', wind east; 4 p. m., fresh breeze and threatening weather; 8 p. m., every indication of a cyclone, heavy wind squalls and sea rising. 18th, in N. 24° 19', W. 65° 22', wind east, barometer 29.85 (758); 8 a. m., hove to, heavy gale and high sea; noon, gale increasing, with high cross seas; 4 p. m., gale increasing and hauling to south and southeast; 8 p. m., gale blowing with increasing violence;

8 to 10 p. m., ship labored heavily and shipped great quantities of water, one lifeboat stove in and others started from their chocks, tarpaulins, hatches, and deckload shifted, injuring 6 men. 19th, in N. 25° 01', W. 66° 09', in morning, shipped heavy seas, which caused considerable damage, and ship listed 12° to starboard; at 2 p. m. resumed course.

On the 16th low area IV advanced over Newfoundland, and on the 17th was central north of Newfoundland, with pressure below 29.70 (754). By the 19th this storm had moved to mid-ocean, with pressure about 29.50 (749) and north to northwest gales of force 9 to 11 near the 40th meridian, and on the 20th gales of force 8 were encountered near the 30th meridian. From the 21st to 23d the storm apparently moved slowly eastward over the British Isles.

The night of the 25th low area VII passed southward off the south New England coast, this abnormal course being caused by high pressure to the eastward. By the night of the 26th the storm-center had been forced southward off the Virginia coast, and by the morning of the 27th had recurved northward off the New Jersey coast. During the next 24 hours the storm remained nearly stationary off the New England coast, and by the 29th apparently dissipated south of Nova Scotia. On the 27th a storm of marked strength appeared over mid-ocean, with pressure below 29.40 (747), and northerly gales of force 9 to 10 between the 30th and 40th meridians. This storm moved slightly to the southeastward by the 28th, and north-northeast gales of force 8 were encountered near the 20th meridian. By the 29th the center of disturbance had advanced southwest of the British Isles, and gales of force 8 to 11 were reported east of the 20th meridian. During the 29th and 30th this storm apparently moved eastward over the southern part of the British Isles.

OCEAN ICE IN AUGUST.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for August during the last 11 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
August, 1882.....	46 50	46 00	August, 1882.....	46 50	46 00
August, 1883.....	43 26	51 41	August, 1883.....	48 00	44 00
August, 1884.....	43 24	48 44	August, 1884.....	47 50	43 50
August, 1885.....	43 48	52 04	August, 1885.....	48 03	42 45
August, 1886.....	48 35	48 46	August, 1886.....	50 00	48 00
August, 1887.....	42 21	49 51	August, 1887.....	48 06	40 00
August, 1888.....	Straits of Belle Isle		August, 1888.....	51 33	55 00
August, 1889.....	43 34	48 38	August, 1889.....	53 00	45 00
August, 1890.....	42 30	50 21	August, 1890.....	50 13	39 10
August, 1891.....	44 07	52 05	August, 1891.....	47 32	42 45
August, 1892.....	46 45	53 00	August, 1892.....	48 43	44 49
Mean.....	45 10	50 39	Mean.....	49 04	44 40

*Isolated field ice in N. 58°, W. 40°.

The above table shows that for August, 1892, ice was reported about 1½° north of the average southern limit of ice for the corresponding month of the last 11 years. The position of the easternmost ice reported for the current month about corresponded with the average eastern limit for August. The southernmost ice reported, an iceberg on the 1st and another on the 8th, was noted off Cape Race, and the easternmost ice, an iceberg, was observed on the 3d in the position given in the table. The ice reported for the current month was greatly deficient, as compared with the average quantity noted for August of preceding years, and on three dates only were icebergs or field ice noted south of the 50th parallel.

The limits of the region within which icebergs or field ice were reported for August, 1892, are shown on Chart I by ruled shading.

OCEAN FOG IN AUGUST.

The limits of fog belts west of the 40th meridian, as reported by shipmasters, are shown on Chart I by dotted shading. Near the Banks of Newfoundland fog was reported on 19

dates; between the 55th and 65th meridians on 17 dates; and west of the 65th meridian on 14 dates. Compared with the corresponding month of the last 4 years, the dates of occurrence of fog near the Grand Banks numbered 3 less than the average; between the 55th and 65th meridians 6 more than the

average; and west of the 65th meridian 5 more than the average. The fog noted by shipmasters and that reported by observers of the Weather Bureau on the New England and middle Atlantic coasts generally attended the advance or passage of general storms.

TEMPERATURE OF THE AIR (expressed in degrees, Fahrenheit).

The distribution of mean temperature over the United States and Canada for August, 1892, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the average for the several districts. The normal for any district may be found by adding the departure to the current mean when the temperature is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The mean temperature was highest in the Colorado Desert, California, and in the lower Gila valley, Arizona, where it was 95 and above, and the mean readings were above 80 in the central valleys of California, in the lower Colorado and Gila valleys, over the greater part of Texas, along the coast of the Gulf of Mexico, and in the south Atlantic states and Florida. The mean temperature was lowest in the mountains of Colorado, where it was below 55, and the mean values were below 60 along the immediate Pacific coast from San Francisco, Cal., northward, and in the northern Saskatchewan and lower Saint Lawrence valleys.

DEVIATIONS FROM NORMAL TEMPERATURE.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for August for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for August, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for August during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of Aug.	(2) Length of record.	(3) Mean for Aug., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for August.			
					Highest.	Year.	Lowest.	Year.
<i>Arizona.</i>	<i>Years</i>	<i>°</i>	<i>°</i>	<i>°</i>	<i>°</i>		<i>°</i>	
Fort Apache.....	72.5	19	70.6	-1.9	77.1	1877	67.9	1884
Fort Mohave.....	93.6	21	94.2	+0.6	98.8	1875	89.9	1890
Whipple Barracks.....	72.5	21	73.4	+0.9	78.9	1879	67.5	1891
<i>Arkansas.</i>								
Keesees Ferry.....	77.9	10	77.7	-0.2	81.0	1886	75.5	1882
<i>California.</i>								
Fort Bidwell.....	70.4	21	68.6	-1.8	73.9	1878	62.6	1876
Riverside.....	77.7	10	.....	.....	81.5	1885	73.6	1887
<i>Colorado.</i>								
Las Animas.....	73.6	9	73.2	-0.4	77.1	1889	70.4	1884
<i>Florida.</i>								
Merritts Island.....	81.4	10	77.9	-3.5	83.8	1883	77.9	1892
<i>Georgia.</i>								
Forsyth.....	78.8	18	79.7	+0.9	82.4	1878	73.2	1885
<i>Idaho.</i>								
Boise Barracks.....	72.4	18	69.4	-3.0	75.1	1878	67.3	1881
Fort Sherman.....	66.2	8	66.4	+0.2	68.0	1891	63.7	1889
<i>Illinois.</i>								
Centralla.....	75.9	10	.....	.....	84.0	1881	71.0	1882
<i>Indiana.</i>								
Lafayette.....	70.2	10	72.5	+2.3	74.0	1886	68.2	1885
<i>Indian Territory.</i>								
Fort Supply.....	79.3	13	77.0	-2.3	90.8	1874	76.0	1882
<i>Iowa.</i>								
Cresco.....	68.7	19	68.3	-0.4	72.6	1881	63.1	1885
<i>Kansas.</i>								
Eureka Ranch.....	77.4	9	75.6	-1.8	80.8	1889	74.2	1891
Independence.....	77.7	20	80.0	+2.3	85.8	1874	72.8	1884
Salina.....	77.6	10	76.6	-1.0	81.7	1888	74.2	1883

Deviations from normal temperature—Continued.

State and station.	(1) Normal for the month of Aug.	(2) Length of record.	(3) Mean for Aug., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for August.			
					Highest.	Year.	Lowest.	Year.
<i>Louisiana.</i>	<i>°</i>	<i>Years</i>	<i>°</i>	<i>°</i>	<i>°</i>		<i>°</i>	
Grand Coteau.....	81.3	8	79.9	-1.4	83.6	1883	78.9	1889
<i>Maine.</i>								
Orono.....	65.3	22	66.4	+1.1	67.5	1881	63.1	1874
<i>Maryland.</i>								
Cumberland.....	71.3	21	75.2	+3.9	75.7	1871, 1872	68.5	1883
<i>Michigan.</i>								
Kalamazoo.....	69.2	15	71.7	+2.5	73.0	1881	63.8	1885
<i>Missouri.</i>								
Sedalia.....	77.0	11	77.4	+0.4	85.4	1881	72.6	1891
<i>Montana.</i>								
Fort Custer.....	69.8	12	.....	.....	73.8	1891	66.2	1885
<i>Nebraska.</i>								
Fort Robinson.....	69.9	9	70.2	+0.3	74.3	1886	64.7	1888
Genoa (near).....	72.5	16	72.0	-0.5	77.6	1881	68.5	1885
<i>Nevada.</i>								
Browns.....	80.0	20	84.3	+4.3	84.3	1892	76.5	1871
Carson City.....	69.3	16	69.3	0.0	72.4	1878	63.8	1876
<i>New Hampshire.</i>								
Hanover.....	66.2	19	66.0	-0.2	70.4	1881	59.2	1885
<i>New Mexico.</i>								
Deming.....	83.4	10	85.0	+1.6	91.5	1888	80.9	1891
Fort Wingate.....	70.2	21	71.3	+1.1	76.7	1877	65.8	1887
<i>New York.</i>								
Cooperstown.....	66.4	21	65.4	-1.0	71.5	1877	62.4	1889
Plattsburg Barracks.....	67.7	21	66.6	-1.1	71.3	1872	64.3	1885, 1888
<i>North Carolina.</i>								
Lenoir.....	73.2	19	73.1	-0.1	77.0	1877	70.0	1890
<i>Oklahoma.</i>								
Fort Reno.....	78.6	9	.....	.....	83.2	1886	76.4	1884, 1891
Fort Sill.....	80.9	20	75.0	-5.9	91.0	1874	75.0	1892
<i>Oregon.</i>								
Bandon.....	57.6	8	57.0	-0.6	61.1	1891	54.4	1886
Eola.....	64.8	21	65.4	+0.6	67.6	1875	61.2	1881
<i>Pennsylvania.</i>								
Dyberry.....	64.9	21	65.9	+1.0	68.3	1872	61.2	1889
Grampian.....	67.8	21	69.4	+1.6	73.1	1881	64.4	1873
Wellsboro.....	65.4	13	64.0	-1.4	71.3	1881	62.0	1891
<i>South Carolina.</i>								
Statesburg.....	76.6	11	77.8	+1.2	79.7	1881	73.5	1889
<i>South Dakota.</i>								
Fort Sully.....	72.9	21	75.2	+2.3	77.4	1871	67.6	1885
<i>Texas.</i>								
Austin.....	83.8	19	81.7	-2.1	86.5	1874, 1886	80.0	1880
Silver Falls.....	78.8	6	77.4	-1.4	81.4	1887	74.8	1888
<i>Utah.</i>								
Terrace.....	77.2	18	81.3	+4.1	83.8	1888	65.6	1872
<i>Vermont.</i>								
Stratford.....	67.5	19	65.4	-2.1	72.6	1884	63.9	1885
<i>Virginia.</i>								
Dale Enterprise.....	74.3	12	77.0	+2.7	77.5	1888	67.0	1890
<i>Washington.</i>								
Fort Townsend.....	61.4	19	.....	.....	64.3	1874	58.9	1876
<i>West Virginia.</i>								
Parkersburg.....	75.2	11	71.6	-3.6	87.6	1881	67.8	1885
<i>Wisconsin.</i>								
Embarrass.....	67.6	21	67.0	-0.6	73.0	1876	64.0	1885, 1890
Madison.....	69.3	16	70.2	+0.9	73.1	1886	64.2	1885
<i>Wyoming.</i>								
Fort Washakie.....	68.7	10	65.3	-3.4	72.3	1881	64.1	1888

DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was generally above the normal, except in the interior of the west Gulf states and Texas, along the middle and south Pacific coasts, on the northeast slope of the Rocky Mountains, and in the Saint Lawrence Valley. The greatest departure above the normal temperature was noted in Virginia, Upper Michigan, and north-central Nebraska, where it exceeded 3, and the monthly mean was 2 or more above the normal at Chatham, N. B., Yarmouth, N. S., over the east part of the middle Atlantic states, generally in the Lake region, in the Red River of the North and extreme upper Mississippi valleys, and over a part of the middle-eastern slope of the Rocky Mountains. The most marked departure below the normal temperature was reported in northern

Louisiana and central Texas, where it was more than 2, and the mean was 1 or more below the normal in adjoining parts of Louisiana, Arkansas, west-central Mississippi, and eastern Texas, over the greater part of central and southern Texas, and along the south Pacific coast.

YEARS OF HIGHEST MEAN TEMPERATURE FOR AUGUST.

At Manchester, N. H., Northfield, Vt., Vineyard Haven, Mass., Narragansett Pier, R. I., Harrisburg, Pa., Hatteras and Raleigh, N. C., Columbia, S. C., Parkersburg, W. Va., Sault Ste. Marie, Mich., Green Bay, Wis., Kansas City and Springfield, Mo., Topeka and Wichita, Kans., Crete, Nebr., and Carson City and Browns, Nev., the mean temperature for the current month was the highest ever reported for August during the respective periods of observation. The highest mean temperature for August occurred generally along the Pacific coast in 1891; over the east part of the middle and southern plateau regions in 1889; over the northern plateau region in 1888; on the northeast slope of the Rocky Mountains in 1882; generally in the central valleys in 1881; in the south Atlantic states and the upper lake region in 1878, and in the middle Atlantic and New England states in 1872.

YEARS OF LOWEST MEAN TEMPERATURE FOR AUGUST.

At Merritts Island, Fla., Abilene, Tex., Fort Sill, Okla., and Neah Bay, Wash., the mean temperature for the current month was the lowest ever reported for August during the respective periods of observation. The lowest mean temperature for August was noted on the south Atlantic coast in 1889; generally over the northern districts east of the Rocky Mountains in 1885; over the east part of the middle and southern plateau regions in 1884; over the western plateau region, Oregon, and northern California in 1881; on the south Pacific coast and in the lower Rio Grande valley in 1880; in the interior of the east Gulf states in 1879; in Tennessee and Kentucky in 1875, and in the middle Atlantic and New England states in 1874.

MAXIMUM TEMPERATURE.

At Dodge City, Kans., Valentine, Nebr., Port Angeles, Wash., and San Francisco, Cal., the maximum temperature was higher, and at Block Island, R. I., and Keeler, Cal., it was as high as previously reported for August.

The highest temperature reported at a regular station of the Weather Bureau in August, 1892, was 114, at Yuma, Ariz., on the 17th. The maximum temperature rose to 112 at Fresno, Cal., and was above 100 in the central valleys of California, in the Colorado and Gila valleys, and in an area extending from eastern Montana to northwestern Arkansas. The maximum values were above 90, except on the south New England coast, at points on the North Carolina coast, over northern New England and the northern lake region, in the interior of New Mexico, and along the immediate Pacific coast. At points on the immediate Pacific coast north of the 40th parallel the maximum temperature was below 70.

Reports of voluntary observers show maximum temperature above 120 in the Colorado Desert and lower Colorado valley.

MINIMUM TEMPERATURE.

At Portland, Me., Cheyenne, Wyo., and Montrose, Colo., the minimum temperature was the lowest ever reported for August.

The lowest temperature reported at a regular station of the Weather Bureau was 30, at Cheyenne, Wyo., on the 29th. The minimum was 32 at Saint Vincent, Minn., on the 30th. From the Red River of the North Valley to north-central Nebraska, and in an area extending from eastern Oregon and northern Nevada over Wyoming and northern Colorado the minimum values were below 40. The highest minimum temperature was noted over southern Florida and along the west Gulf coast, where it was above 70.

Reports of voluntary observers show temperature below freezing in eastern Upper Michigan, northeastern North Dakota, eastern South Dakota, and at points in the middle Rocky Mountain and plateau regions.

RANGES OF TEMPERATURE.

The greatest daily ranges of temperature are shown in the table of miscellaneous meteorological data. The greatest monthly ranges of temperature were noted in the middle Missouri valley and thence over southeastern Idaho, where they exceeded 60. From that region they decreased eastward to less than 30 on the middle Atlantic and south New England coasts, southeastward to less than 20 over extreme southern Florida and along the west Gulf coast, southwestward to less than 30 on the extreme south Pacific coast, and westward to less than 30 along the immediate middle and north Pacific coasts.

TEMPERATURE, JANUARY TO AUGUST.

For the period January 1 to August 31, 1892, the temperature averaged about normal in the middle Atlantic states, the lower lake region, on the southeast slope of the Rocky Mountains, over the northern plateau region, and along the north Pacific coast. In New England, the upper lake region, and the extreme northwest the mean temperature averaged less than 1 above, and over the middle plateau region it was 1 to 2 above the average. In the west Gulf states, the Ohio Valley and Tennessee, the upper Mississippi and Missouri valleys, on the northeast and middle-eastern slopes of the Rocky Mountains, over the southern plateau region, and along the middle Pacific coast the temperature was less than 1 deficient, and in the south Atlantic and east Gulf states, at Key West, Fla., and along the south Pacific coast it was 1 to 2 below the average for the period named.

PERIODS OF HIGH TEMPERATURE.

The warmest weather of the month over the greater part of the country attended the passage of a warm wave during the first decade. This warm wave occupied the western plateau region at the opening of the month, with temperature ranging from 90 at Carson City, Nev., to 103 at Keeler, Cal. On the 2d the temperature rose to 100 over the northern plateau region, and on the 3d ranged from 90 to 98 on the northeast slope of the Rocky Mountains. The crest of the warm wave passed over the central valleys from the 5th to the 8th, reached the middle Atlantic coast on the 9th, and the New England coast on the 10th.

In the advance of this warm wave from the Rocky Mountains to the Atlantic coast the maximum temperature was above 100 in South Dakota, northern and western Kansas, and southeastern Colorado on the 4th; 90 to 100 in the lower Missouri and upper Mississippi valleys on the 5th; 90 to 100 in the Southwest on the 6th; 90 to 100 in the central districts on the 7th; 90 to 96 in the Ohio and upper Mississippi valleys and the southwestern lake region on the 8th; 92 to 94 in the middle Atlantic states on the 9th, and 90 to 94 from western New York over central New England on the 10th. By the night of the 11th the warm wave was passing off the coast, and during the 12th a decided fall in temperature occurred in the Atlantic coast states.

This warm wave is made the subject of a paper which appears in this issue of the REVIEW.

From the 12th to the 15th a warm wave passed from the Pacific coast over the northern lake region. A warm wave advanced from the Pacific coast to the Lake region from the 17th to the 20th, and from the 24th to the 26th a warm wave moved from the Pacific coast to the extreme northwest. On the 28th a marked rise in temperature occurred over the northern plateau region, and by the close of the month this warm wave had overspread the Mississippi and Missouri valleys and the Southern States.

PERIODS OF LOW TEMPERATURE.

The lowest temperature of the month between the Rocky and Alleghany mountains attended a cool wave which advanced from the northern plateau region and the northeast slope of the Rocky Mountains on the 28th to the Mississippi and Ohio valleys and the Lake region on the 31st. This cool

wave was attended by frost from New Mexico over the Dakotas, Iowa, Minnesota, northern Wisconsin, and northern Michigan. Marked temperature falls in the Northwest on the 2d, 5th, 8th, 12th, and 18th were followed by cooler weather in limited areas in the northwest and north-central districts.

FROST.

The first heavy frost of the season was reported as follows: 29th, Dulce, N. Mex.; Gallatin and Millbank, S. Dak. 30th, Monero, N. Mex.; Milton, N. Dak.; Evanston, Wyo. The first light frost of the season was reported as follows: 8th, Coolidge, N. Mex. 9th, Evanston, Wyo. 17th, Miles City, Mont. 18th, Fort Buford, N. Dak. 19th, Barron, Crandon, and Osceola Mills, Wis. 20th, Fayette, Iowa; Meadow Valley, Wis. 27th, Mullen, Nebr. 28th, Beaver, Idaho. 29th, Fort Collins and

Smoky Hill Mine, Colo.; Gering, Kennedy, and North Loup, Nebr.; Bowdle, Faulkton, and Frankfort, S. Dak.; Cheyenne, Lander, and Saratoga, Wyo. 30th, San Luis, Colo.; Corydon, Decorah, Greenfield, and Mason City, Iowa; Bloomfield, Halls Peak, and Ohio, N. Mex.; Ashley, Churchs Ferry, and Forman, N. Dak.; Aberdeen, Brookings, Castlewood, Cross, De Smet, and Forestburg, S. Dak. 31st, Philo, Ill.; College Springs, Cresco, Grundy Center, Iowa City, Mechanicsville, and Osage, Iowa; Florence, Wis.

Frost injurious to vegetation was reported as follows: 17th and 28th, produce damaged about Tuscarora, Nev. 20th and 22d, vines slightly nipped about Sault Ste. Marie, Mich. 29th, vines and tender vegetation slightly injured at Gering, Nebr., and Lander, Wyo. 30th, slight damage caused at Mason City and Ottumwa, Iowa, and Evanston, Wyo.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for August, 1892, as determined from the reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The precipitation for August is usually greatest along the eastern coast of the Gulf of Mexico, where it exceeds 8.00, and the normal amount exceeds 6.00 along the immediate south Atlantic and middle Gulf coasts. In the Atlantic coast states, in areas in the western lake region and upper Mississippi valley, and in the mountain regions of central New Mexico and southeastern Arizona 4.00 to 6.00 is usually recorded. In all districts east of the Rocky Mountains, and in areas in the southern plateau region, the precipitation for August generally exceeds 2.00. Over the western plateau and Pacific coast districts the monthly average is less than 1.00, save on the extreme north Pacific coast, where it exceeds 2.00. Over a great part of the western plateau region, and in the middle and south Pacific coast states, there is usually an almost entire absence of precipitation in August.

In August, 1892, the monthly precipitation was greatest in the southern parts of the east Gulf states and Georgia, and in central parts of the Florida Peninsula, where it exceeded 8.00, and in areas in those districts it exceeded 10.00. The monthly precipitation also exceeded 8.00 at stations in New Hampshire and western Maine. The precipitation east of the Rocky Mountains was very irregularly distributed. In the Atlantic coast states it varied from 4.00 to 6.00 in areas, and in Maryland, the District of Columbia, and northern and central Virginia it was less than 2.00. Over the greater part of California, Oregon, and the western plateau region no rainfall was reported, and it was less than 1.00 in all districts west of the Rocky Mountains, except on the extreme north Pacific coast and in areas in southeastern Arizona.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was generally deficient, except from the lower lake region and New York over New England and the Canadian Maritime Provinces, in the middle and west Gulf states, at points in a narrow strip extending from eastern Manitoba to Texas, and in the British Possessions. In small areas in the northeast and southwest districts the excess was 4.00 to 6.00. The most marked deficiency was shown in the Atlantic coast states south of Pennsylvania, where it was 2.00 to 4.00. The deficiency was also more than 2.00 in New Mexico, and at Davenport, Iowa, and Indianapolis, Ind.

Considered by districts the monthly precipitation averaged about normal in the Missouri Valley, on the middle-eastern slope of the Rocky Mountains, and on the north Pacific coast. In districts where the precipitation was in excess the average percentage of the normal was about as follows: East Gulf states, 146; west Gulf states, 142; lower lake region, 129; extreme northwest, 127; New England, 119. In districts where the precipitation was deficient the percentage of the normal was about as follows: middle plateau region, 17; Key West, Fla., 33; southern plateau region, 36; south Atlantic states, 48; northern plateau region, 51; middle Atlantic states, 73; upper Mississippi valley, 78; northeast slope of the Rocky Mountains, 83; Ohio Valley and Tennessee, 84; southeast slope of the Rocky Mountains, 86; upper lake region, 87.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for August for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for August, 1892; (4) the departure of the current month from the average; (5) and the extremes for August during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of August.	(2) Length of record.	(3) Total for August, 1892.	(4) Departure from average.	(5) Extremes for August.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Arizona.</i>	<i>Inches.</i>	<i>Years</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Fort Apache.....	3.99	16	1.36	- 2.63	9.33	1878	1.00	1888
Fort Mohave.....	0.67	21	0.00	- 0.67	3.80	1873	0.00	1871, 1892
Whipple Barracks.....	2.95	21	2.04	- 0.91	6.34	1878	0.24	1873
<i>Arkansas.</i>								
Keesees Ferry.....	5.66	10	2.88	- 2.78	11.53	1888	2.37	1891
<i>California.</i>								
Fort Bidwell.....	0.14	21	0.02	- 0.12	0.42	1880	0.00	†
Riverside.....	0.33	11	.....	.....	3.00	1884	0.00	*
<i>Colorado.</i>								
Las Animas.....	1.63	9	0.12	- 1.51	3.75	1885	0.06	1889
<i>Florida.</i>								
Merritts Island.....	6.11	14	2.37	- 3.74	15.77	1880	1.15	1883
<i>Georgia.</i>								
Forsyth.....	4.97	18	7.72	+ 2.75	8.05	1891	2.50	1888
<i>Idaho.</i>								
Boise Barracks.....	0.23	19	0.00	- 0.23	1.65	1873	0.00	†
Fort Sherman.....	0.29	8	1.51	+ 1.22	1.51	1892	0.00	1882, 1886
<i>Illinois.</i>								
Centralia.....	3.69	13	.....	.....	7.80	1888	0.60	1881
<i>Indiana.</i>								
Lafayette.....	3.81	10	3.57	- 0.24	7.17	1890	1.12	1884
<i>Indian Territory.</i>								
Fort Supply.....	1.83	13	4.52	+ 2.69	5.32	1883	0.35	1874
<i>Iowa.</i>								
Cresco.....	3.13	19	2.65	- 0.48	8.34	1884	0.92	1889
<i>Kansas.</i>								
Eureka Ranch.....	4.04	3	2.93	- 1.11	8.35	1888	1.29	1891
Independence.....	3.07	20	4.22	+ 1.15	7.46	1885	0.33	1891
Salina.....	3.00	10	4.49	- 1.49	6.60	1887	0.30	1882
<i>Louisiana.</i>								
Grand Coteau.....	3.96	8	2.25	- 1.71	8.07	1888	0.42	1883

Deviations from average precipitation—Continued.

State and station.	(1) Average for the month of Aug.	(2) Length of record.	(3) Total for Aug., 1892.	(4) Departure from average.	(5) Extremes for August.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Maine.</i>	<i>Inches.</i>	<i>Years.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Orono	3.66	21	6.41	+ 2.75	7.36	1885	0.53	1883
<i>Maryland.</i>								
Cumberland	3.17	21	1.90	- 1.27	8.09	1882	0.31	1881
<i>Michigan.</i>								
Kalamazoo	2.72	16	2.51	- 0.21	8.94	1885	0.31	1889
<i>Missouri.</i>								
Sedalia	2.24	14	0.29	- 1.95	5.83	1888	0.29	1892
<i>Montana.</i>								
Fort Custer	1.10	12	.....	.....	2.55	1880	0.03	1881
<i>Nebraska.</i>								
Fort Robinson	1.94	9	1.94	0.00	3.32	1887	0.90	1886
<i>Nevada.</i>								
Genoa (near)	2.43	16	5.81	+ 3.38	5.81	1892	0.45	1881
<i>New Hampshire.</i>								
Brown	0.08	21	0.00	- 0.08	1.00	1874	0.00	*
<i>New Mexico.</i>								
Carson City	0.14	16	0.02	- 0.12	1.13	1890	0.00	*
<i>New York.</i>								
Hanover	3.37	21	6.25	+ 2.88	7.77	1885, 1890	0.42	1876
<i>North Carolina.</i>								
Deming	1.81	10	0.39	- 1.42	4.19	1886	0.39	1892
<i>Ohio.</i>								
Fort Wingate	2.14	21	0.30	- 1.84	5.90	1878	0.24	1888
<i>Oklahoma.</i>								
Cooperstown	3.41	21	7.96	+ 4.55	9.08	1885	0.63	1876
<i>Oregon.</i>								
Plattsburg Barracks	3.05	21	7.18	+ 4.13	7.18	1892	0.37	1876
<i>Pennsylvania.</i>								
Lenoir	5.90	20	2.40	- 3.50	10.20	1886	2.10	1877
<i>Rhode Island.</i>								
Fort Reno	2.84	9	4.30	+ 1.46	5.53	1883	0.34	1886
<i>South Carolina.</i>								
Fort Mill	3.13	20	4.06	+ 0.93	9.73	1888	T.	1874
<i>South Dakota.</i>								
Bandon	0.60	13	0.15	- 0.45	2.16	1879	0.00	1888
<i>Texas.</i>								
Eola	0.45	21	0.17	- 0.28	1.81	1879	0.00	*
<i>Vermont.</i>								
Dyberry	4.30	20	4.64	+ 0.34	8.77	1885	0.95	1883
<i>Virginia.</i>								
Gramplan	4.49	15	3.74	- 0.75	8.19	1888	1.66	1883
<i>Washington.</i>								
Wellboro	5.14	13	4.73	- 0.41	15.25	1885	0.83	1889
<i>West Virginia.</i>								
Statesburg	4.73	11	1.38	- 3.35	8.78	1891	1.38	1892
<i>Wisconsin.</i>								
Fort Sully	1.94	21	1.48	- 0.46	5.26	1880	0.20	1882
<i>Wyoming.</i>								
Austin	1.91	20	6.45	+ 4.54	6.45	1892	T.	1877
<i>Utah.</i>								
Silver Falls	2.00	6	2.72	+ 0.72	4.29	1888	0.00	1889
<i>Vermont.</i>								
Terrace	0.17	20	0.00	- 0.17	1.21	1878	0.00	*
<i>Virginia.</i>								
Strafford	3.72	19	4.50	+ 0.78	8.85	1890	1.40	1882
<i>Washington.</i>								
Dale Enterprise	4.31	12	2.86	- 1.45	10.50	1882	1.26	1890
<i>West Virginia.</i>								
Fort Townsend	1.76	18	.....	.....	2.52	1891	0.00	1885
<i>Wisconsin.</i>								
Parkersburg	4.19	7	2.33	- 1.86	6.71	1888	0.88	1887
<i>Wyoming.</i>								
Embarrass	5.01	21	3.55	- 1.46	7.85	1881	0.40	1873
<i>Utah.</i>								
Madison	2.39	21	3.43	+ 1.04	6.83	1882	0.56	1881
<i>Vermont.</i>								
Fort Washakie	0.56	10	0.32	- 0.24	2.06	1888	T.	1886

* Generally.

† Frequently.

PRECIPITATION, JANUARY TO AUGUST, 1892.

For the period January to August, 1892, inclusive, the precipitation averaged about normal in the middle Atlantic and east and west Gulf states, the Ohio Valley and Tennessee, the upper lake region, on the middle-eastern slope of the Rocky Mountains, and over the middle and northern plateau regions. In the lower lake region, the extreme northwest, the upper Mississippi and Missouri valleys, and on the northeast slope of the Rocky Mountains the precipitation was one-tenth to three-tenths greater than usual, and in the New England and south Atlantic states, at Key West, Fla., on the southeast slope of the Rocky Mountains, over the southern plateau region, and on the north Pacific coast the precipitation was seven-tenths to nine-tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR AUGUST.

At Portland, Me., Plattsburg Barracks, N. Y., Montgomery, Ala., San Antonio and Austin, Tex., Valentine, Nebr., and Fort Sherman, Idaho, the precipitation for the current month was the greatest ever reported for August during the respective periods of observation. The greatest precipitation for August was noted on the north Pacific coast in 1889; in the

middle and lower Mississippi valleys in 1888; over the northern plateau region in 1887; in the upper Mississippi valley in 1885; along the east Gulf coast and in northern Florida in 1881; along the middle Pacific coast in 1879, and in Maine in 1877.

YEARS OF LEAST PRECIPITATION FOR AUGUST.

At Washington, D. C., Statesburg, S. C., Key West, Fla., Sedalia, Mo., Deming and Santa Fe, N. Mex., and Salt Lake City, Utah, the precipitation for the current month was the least ever reported for August during the respective periods of observation. The least precipitation for August was noted over the east part of the middle and southern plateau regions in 1889; over the northern plateau region in 1888; on the north Pacific coast in 1885; along the Massachusetts and Maine coasts in 1883; in the extreme northwest in 1882; from the upper Ohio valley over Virginia and North Carolina in 1881, and in New York and western New England in 1876.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in August, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Florida	10	Maine	1
New Hampshire	5	Massachusetts	1
Alabama	4	New York	1
Georgia	4	North Carolina	1

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Texas	12	8-9, 9, 14, 15, 24, 25, 30, 31.	Wisconsin	4	10, 24, 29-30.
Florida	8	2, 5-6, 12-13, 13, 17, 29, 31.	Arkansas	3	25-26, 26, 26-27.
Illinois	8	5, 6, 7, 11-12, 23-24, 24.	Louisiana	3	15, 15-16.
New York	8	10, 24, 24-25, 25, 26.	Ohio	3	11, 19, 24-25.
Georgia	7	7, 15, 15-16, 16.	Indiana	2	18-19.
New Hampshire ..	7	11-12, 12, 25-27, 26-27, 27.	Kentucky	2	1, 11.
Kansas	6	10, 22, 22-23, 23.	Maine	2	10, 12, 25.
Alabama	4	12, 15-16, 17, 22, 24, 29-30.	Missouri	2	10, 23.
Massachusetts	4	11-12, 26, 26-27.	Connecticut	1	25-26.
North Carolina ..	4	7, 22, 24.	Nebraska	1	28-29.
Pennsylvania	4	10, 10-11, 24-25, 25-26.	Oklahoma	1	11-12.
Virginia	4	1, 21-22, 23, 23-24, 25.	Rhode Island	1	10.
			South Carolina ..	1	1-2.
			South Dakota	1	27-28.
			Tennessee	1	9.
			Vermont	1	25.

Precipitation to equal or exceed 1.00 in 1 hour.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Kansas	15	6, 9, 13, 20, 21, 22, 23, 28.	South Carolina ..	4	8, 12, 24.
Florida	14	2, 3, 5, 9, 13, 14, 22, 26, 27, 28, 29, 31.	Indian Territory ..	3	11, 13, 21.
Alabama	9	12, 13, 15, 19, 21, 22, 26, 29.	Missouri	3	7, 11, 20, 23.
Texas	9	1, 2, 7, 9, 13, 15, 27, 29, 31.	South Dakota	3	12, 13, 14.
North Carolina ..	8	7, 8, 22, 23, 24, 30, 31.	Nebraska	2	10, 23.
Arkansas	5	9, 21, 23, 26, 27.	Virginia	2	22, 31.
Illinois	5	5, 6, 11, 29.	West Virginia	2	2, 12.
Mississippi	5	9, 19, 23, 26.	Wisconsin	2	10, 29.
Georgia	4	7, 15, 18, 23, 25, 26, 27.	Indiana	1	7.
Louisiana	4	9, 16, 24, 27.	Kentucky	1	8.
Ohio	4	1, 8, 19, 24.	Massachusetts	1	12.
			Michigan	1	2.
			New Hampshire ..	1	12.
			New Jersey	1	21.
			New York	1	4.
			North Dakota	1	27.
			Tennessee	1	1.

Table of excessive precipitation, August, 1892.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.						
Brewton.....	13-55	2.50	12			
Do.....		2.50	17			
Do.....		3.50	24	1.00	1 00	2
Daphne.....	11-77					
Eufaula.....	10-09			2.00	1 20	1
Evergreen.....				1.94	1 15	1
Jasper.....		3.14	23	3.14	1 30	1
Mobile.....	13-47			1.81	1 00	
Do.....		2.74	29-30	2.57	0 55	2
Pineapple.....				2.10	1 30	2
Selma.....				1.03	1 00	10
Sturdevant.....		3.06	15-16	1.00	1 00	2
Talladega.....				1.09	0 09	10
Arkansas.						
Arkadelphia.....				2.00	2 00	2
Dallas.....				1.15	1 00	
Hot Springs.....		2.50	26	1.00	0 45	2
Keesee Ferry.....				1.10	0 44	2
Little Rock.....		3.13	26-27			
Stuttgart.....		2.54	25-26			
Washington.....				1.96	1 30	26
Connecticut.						
New Hartford.....		3.02	25-26			
Florida.						
Archer.....	11-15					
Avon Park.....				2.15	1 10	
Do.....				1.00	0 50	2
Bristol.....	12-34			1.01	1 00	
Brooksville.....	13-59	2.50	17			
Clermont.....	10-67					
Federal Point.....	13-10					
Gainesville.....	12-96					
Homeland.....				1.19	1 10	
Hypoluxo.....		3.23	13	3.23	1 35	13
Jacksonville.....				1.30	0 23	31
Jupiter.....				1.05	0 30	14
Ocala.....	10-02	3.40	2	3.40	3 00	2
Do.....				1.00	1 00	22
Orlando.....		3.14	5-6	1.25	0 30	3
Oxford.....	13-74					
Pensacola.....		2.93	31	1.17	1 00	31
Saint Francis Barracks.....		2.50	12-13	1.18	1 00	27
Saint Petersburg.....	10-87			1.67	0 40	26
Do.....		2.53	29	2.53	2 20	29
Tampa.....				1.05	0 47	3
Do.....				1.83	0 45	9
Do.....				1.00	0 50	26
Tarpon Springs.....	13-56	4.85	13	1.26	1 00	29
Titusville.....				1.20	1 05	5
Georgia.						
Alapaha.....	10-20					
Albany.....		4.60	16			
Americus.....		3.25	15-16			
Atlanta.....				1.15	0 53	25
Blakely.....		3.07	7			
Fleming.....	12-31	4.45	15			
Forsyth.....				1.44	1 00	23
Do.....				1.61	1 00	27
Lumpkin.....				2.29	1 30	18
Morgan.....		2.75	15			
Poulan.....	12-33			1.22	0 45	7
Do.....				1.61	1 30	15
Do.....				1.16	1 00	26
Quitman.....		3.23	15-16			
Thomasville.....	13-89	5.02	15-16			
Illinois.						
Cairo.....		2.80	11-12	1.42	1 00	11
Collinsville.....		2.60	7			
Ellsworth.....		2.90	5			
Louisville.....		3.60	6			
Pana.....		4.50	6	4.50	2 00	6
Philo.....		3.18	5	2.63	0 45	5
Rantoul.....				1.13	1 00	6
Rockford.....		4.80	23-24			
Springfield.....				1.34	1 00	29
Winnebago.....		3.66	24			
Indiana.						
Butterville.....		2.86	18-19			
Degonia Springs.....				1.48	1 20	7
New Albany.....		2.60	19			
Indian Territory.						
Fort Supply.....				1.60	1 00	13
Healdton.....				1.18	1 00	11
South McAlester.....				1.25	1 00	21
Kansas.						
Allison.....				2.32	1 30	9
Altos.....		4.08	23			
Coldwater.....				1.08	1 00	21
Cunningham.....				1.28	0 45	13
Dodge City.....				1.15	0 35	9
Do.....				1.40	1 14	23
Gibson.....		2.82	22-23			
Grainfield.....				1.00	0 55	28
Greensburg.....				1.56	1 00	23
Hesston.....		2.75	22			
Lebo.....				2.01	0 30	22
Macksville.....				1.00	0 30	20
Manhattan.....				1.02	0 20	23
Oakley.....		2.50	23			
Oswego.....				1.73	1 00	22
Quinter.....		2.50	23	2.50	1 00	23

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Kansas—Continued.						
Salina.....				1.32	0 50	13
Sharon Springs.....				2.00	0 40	20
Wakefield.....				1.20	0 40	6
Wallace b.....				1.00	0 35	22
Yates Center.....		2.72	10			
Kentucky.						
Harrodsburg.....				1.20	1 00	
Wickliffe.....		2.87	11			
Williamsburg a.....		2.50	1			
Williamsburg b.....		2.89	1			
Louisiana.						
Abbeville.....		3.20	15			
Baton Rouge.....				1.19	1 00	27
Emilie.....				1.10	0 45	24
Markaville.....				1.15	0 25	9
Do.....				1.25	0 20	27
New Orleans.....		3.85	15-16	1.07	1 00	16
Sugar Experiment Station.....		5.48	15			
Maine.						
Cornish.....	11-12	3.17	12			
Do.....		3.61	25			
Mayfield.....		2.54	10			
Massachusetts.						
Amherst.....		2.50	11-12			
Boston.....				1.50	1 00	12
Monroe.....		2.62	26			
Princeton.....		2.90	26			
Royalston.....	10-12					
Springfield Armory.....		2.60	26-27			
Michigan.						
Manistee.....				1.67	0 30	8
Mississippi.						
Crystal Springs.....				1.36	0 50	23
Duck Hill.....				1.78	1 20	19
Louisville.....				1.66	1 00	26
Vaiden.....				1.04	1 00	9
Waynesboro b.....				1.40	0 30	26
Missouri.						
Gainesville.....				2.35	1 15	30
Do.....				1.16	0 30	23
Gallatin.....		4.50	23			
Gordonville.....				1.04	1 00	7
New Haven.....		2.50	10			
Oto.....				1.40	1 06	11
Nebraska.						
Franklin.....		2.83	28-29			
Orleans.....				1.20	0 30	23
Valentine.....				1.56	1 25	10
New Hampshire.						
Belmont.....		4.36	25-27			
Brookline.....		3.20	12			
Concord a.....		3.10	12			
Do.....		2.77	27			
East Canterbury.....	11-16	3.25	11-12			
Do.....		3.15	26-27			
Grafton.....	11-23	2.53	12			
Lakeport.....		2.58	11-12			
Do.....		4.85	25-27			
Manchester (V. O.).....				2.20	1 00	12
Mount Washington.....	10-30					
Plymouth.....	10-85					
Sanborn.....	10-68					
Wiers Bridge.....		2.74	11-12			
Do.....		4.47	25-27			
New Jersey.						
Egg Harbor City.....				1.86	1 35	21
New York.						
Canton.....		4.60	24-25			
DeKalb Junction.....		5.03	25			
Gloversville.....		3.16	25			
Ithaca.....				1.47	0 25	4
North Hammond.....	11-78	6.40	26			
Number Four.....		3.12	25			
Palermo.....		2.49	10			
Sherman.....		4.65	24			
Utica.....		2.60	25			
North Carolina.						
Currituck Inlet.....		2.65	24			
Goldsboro.....				1.00	0 50	24
Horse Cove.....	10-15			1.37	0 56	8
Louisburg.....				1.55	1 30	22
Lumberton.....				1.32	1 00	30
Raleigh.....				1.00	1 00	7
Saxon.....		3.24	24			
Soapstone Mount.....		2.54	7	2.54	1 15	7
Do.....				1.35	1 10	23
Weldon.....		3.60	22	3.43	0 50	22
Wilmington.....				1.17	0 52	31
North Dakota.						
Bismarck.....				1.05	1 00	27
Ohio.						
Bloomington.....		3.25	11			
Cleveland.....				1.12	1 00	19
Columbus.....				1.03	0 40	1
Jacksonboro.....				1.50	1 00	8
Marion.....		2.50	19			
Sandusky.....		3.54	24-25	2.25	0 45	24
Oklahoma Territory.						
Oklahoma City.....		3.00	11-12			
Pennsylvania.						
Blooming Grove.....		3.20	25-26			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Pennsylvania—Continued.</i>						
Corry	<i>Inches.</i>	<i>Inches.</i>		<i>Inches</i>	<i>h. m.</i>	
Erie		4.00	10-11			
Wilkesbarre		2.54	24-25			
		2.67	10			
<i>Rhode Island.</i>						
Lonsdale		2.63	10			
<i>South Carolina.</i>						
Charleston				1.73	1 00	24
Cheraw				1.82	1 00	8
Columbia		3.11	1-2			
Greenville				1.04	0 45	12
Port Royal				1.25	0 30	12
<i>South Dakota.</i>						
Gary				1.00	1 00	13
Millbank		5.00	27-28			
Parkston				2.30	1 00	12
Wolsey				1.25	0 45	14
<i>Tennessee.</i>						
Bethel Springs		2.59	19			
Nashville				1.18	0 54	1
<i>Texas.</i>						
Abilene				1.00	0 20	29
Belton		3.12	9	1.23	0 45	1
Brady		2.61	25			
Brownwood		3.00	24			
Burnett		2.55	31			
Camp Eagle Pass		4.45	30			
Duval		2.75	9			
Fay				1.12	0 50	7
Galveston		4.32	8-9	2.35	2 02	9
Graham				1.12	0 45	27
Houston				1.62	1 15	2
Huntsville		2.50	14			
Mountain Spring				1.29	1 00	13
Paris		2.50	14			
Round Rock		3.56	9			
San Antonio (W. B.)		3.20	31	3.20	2 45	31
San Antonio (V. O.)		3.23	31	1.34	0 45	1
Victoria		2.78	15	2.78	1 40	15
<i>Vermont.</i>						
Saxtons River		2.81	25			
<i>Virginia.</i>						
Birdsneat		5.55	21-22	1.35	0 35	22
Cape Henry		3.94	23			
Norfolk				1.67	1 00	31
Standardsville		3.50	1			
Do.		4.29	23-24			
Staunton		2.65	25			
<i>West Virginia.</i>						
Bluefield				2.49	1 15	2
Glenville				1.14	0 20	12
<i>Wisconsin.</i>						
Barron				1.68	1 00	29
Florence		2.50	10			
Milwaukee		2.52	24			
Oscoda		3.00	29-30			
Raymond		4.00	24			
Sparta				1.12	0 30	10

Received too late for publication in July, 1892.

<i>Alabama.</i>						
Tuscaloosa	10.03					
Wetumpka	10.10	2.70	14			
<i>Montana.</i>						
Great Falls				1.18	0 25	9
<i>West Virginia.</i>						
Morgantown	2.65	2.65	3			

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during August, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Atlanta, Ga.	Inch.		Inch.		Inch.	
Bismarck, N. Dak.	0.45	1	0.65	1	1.15	25
Boston, Mass.	0.30	27	0.56	27	1.05	27
Buffalo, N. Y.	0.50	12	0.80	12	1.50	12
Cincinnati, Ohio	0.30	19	0.40	19	0.70	19
Chicago, Ill.	0.20	24	0.30	24	0.45	19, 24
Cleveland, Ohio	0.20	30	0.21	30	0.23	30
Denver, Colo.	0.35	19	0.56	19	1.12	19
Detroit, Mich.	0.04	8	0.05	8	0.15	28
Dodge City, Kans.	0.16	19	0.24	19	0.80	19
Duluth, Minn.	0.35	23	0.60	9	1.15	9
Eastport, Me.	0.25	16	0.30	16	0.55	8
Galveston, Tex.	0.27	5	0.30	5	0.42	12
	0.31	9	0.41	9	1.10	9

Maximum rainfall in one hour or less—Continued.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Indianapolis, Ind.	Inch.		Inch.		Inch.	
Jacksonville, Fla.	0.25	19	0.30	19	0.38	19
Jupiter, Fla.	0.45	31	0.80	31	1.30	31
Kansas City, Mo.	0.30	14	0.50	14	1.05	14
Key West, Fla.	0.09	22	0.15	22	0.35	9
Marquette, Mich.	0.14	11	0.18	11	0.30	11
Memphis, Tenn.	0.20	11	0.23	11	0.45	11
Milwaukee, Wis.	0.12	24	0.17	24	0.50	24
New Orleans, La.	0.20	16	0.35	16	1.07	16
New York, N. Y.	0.20	11	0.30	11	0.65	9
Norfolk, Va.	0.38	31	0.57	31	1.67	31
Philadelphia, Pa.	0.19	25	0.30	25	0.77	25
Philadelphia Water Works	0.17	25	0.34	25	0.51	25
Pittsburg, Pa.						
Portland, Oregon						
Saint Louis, Mo.	0.40	7	0.51	7	0.86	7
Saint Paul, Minn.	0.20	8	0.35	8	0.67	8
Salt Lake City, Utah						
San Diego, Cal.						
San Francisco, Cal.						
Savannah, Ga.	0.33	10	0.40	10	0.78	10
Tampa, Fla.	0.40	9	0.80	9	1.83	9
Washington, D. C.	0.15	5	0.20	5	0.30	5
Wilmington, N. C.	0.25	30	0.39	30	0.92	24

* Less than 0.05 in 1 hour.

† Self-register out of order.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for August during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida	19	Wisconsin	23
North Carolina	17	Kentucky	23
Georgia	16	Arkansas	23
South Carolina	10	Delaware	23
Alabama	10	Maine	23
Virginia	9	Mississippi	23
New York	9	West Virginia	23
Texas	9	Arizona	1
Kansas	7	Colorado	1
Louisiana	7	The Dakotas	1
New Hampshire	7	District of Columbia	1
Illinois	6	Minnesota	1
New Jersey	6	New Mexico	1
Indiana	6	Vermont	1
Iowa	6	California	1
Massachusetts	6	Idaho	0
Connecticut	5	Indian Territory	0
Ohio	5	Montana	0
Pennsylvania	5	Nevada	0
Missouri	5	Oregon	0
Maryland	4	Rhode Island	0
Tennessee	4	Utah	0
Michigan	3	Washington	0
Nebraska	3	Wyoming	0

Excessive daily precipitation (24 hours).

State.	No. years noted.	State.	No. years noted.
Georgia	21	New Jersey	11
Texas	20	Nebraska	10
Florida	19	Indiana	10
North Carolina	19	Maryland	8
South Carolina	18	New Hampshire	8
Pennsylvania	16	Indian Territory	7
Iowa	15	West Virginia	6
Missouri	15	Delaware	5
New York	15	Arizona	5
Tennessee	15	Kentucky	5
Massachusetts	14	Rhode Island	4
Illinois	14	Vermont	4
Mississippi	13	Montana	3
Alabama	13	Maine	2
Ohio	13	Colorado	1
Kansas	13	California	1
Wisconsin	13	District of Columbia	0
Michigan	12	Idaho	0
Connecticut	12	Nevada	0
The Dakotas	12	New Mexico	0
Arkansas	12	Oregon	0
Louisiana	12	Utah	0
Virginia	12	Washington	0
Minnesota	11	Wyoming	0

Excessive hourly precipitation.

State.	No. years noted.	State.	No. years noted.
Texas	17	Kentucky	5
Florida	15	New Jersey	5
Georgia	15	Colorado	4
Tennessee	14	Connecticut	4
Pennsylvania	13	Massachusetts	4
Kansas	13	New Hampshire	4
Ohio	13	Wisconsin	4
North Carolina	13	New Mexico	3
Iowa	11	Maine	3
Michigan	11	Montana	3
South Carolina	11	Rhode Island	2
Virginia	11	Minnesota	2
The Dakotas	10	Indian Territory	2
Nebraska	10	West Virginia	2
Illinois	9	District of Columbia	1
Indiana	9	Vermont	1
New York	8	California	1
Mississippi	8	Delaware	1
Maryland	7	Washington	1
Louisiana	7	Idaho	1
Arkansas	6	Nevada	0
Missouri	6	Oregon	0
Arizona	5	Utah	0
Alabama	5	Wyoming	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for August during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.			Inches.	
Fort Barrancas, Fla.	30.73	1878	Charleston, Ill.	23.04	1882
Asheville, N. C.	25.65	1887	New Smyrna, Fla.	23.00	1871
Elsworth, N. C.	25.33	1880	New Orleans, La.	22.74	1888
Fort Barrancas, Fla.	25.07	1879	Tarboro, N. C.	22.73	1887
Maurepas, La.	23.44	1888	Saint Augustine, Fla.	21.50	1871
Newport, Fla.	23.25	1872	Fairview, Fla.	21.35	1871

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			Inches.	
Campo, Cal.	11.50	12, 1891	Central City, Ky.	7.02	22, 1891
Griffin, Ga.	10.38	8, 1883	Union Point, Ga.	6.60	26-27, 1891
Granbury, Tex.	10.15	26, 1888	Carson, Iowa	6.50	9, 1889
Fort Barrancas, Fla.	9.75	29, 1878	North Hammond, N. Y.	6.40	26, 1892
Hatteras, N. C.	9.14	23, 1880	Chicago, Ill.	6.33	2-3, 1885
Tecumseh, Nebr.	9.00	12, 1889	Hazlehurst, Miss.	6.00	27, 1890
Elsworth, N. C.	9.00	4, 1880	Phillips, Wis.	6.00	8, 1890
New Orleans, La.	8.90	20, 1888	Clarksville, Tenn.	5.90	20, 1891
Mandeville, La.	8.54	8, 1888	Birdnest, Va.	5.55	21-22, 1892
Cape May, N. J.	8.46	18, 1879	Camp Eagle Pass, Tex.	5.55	2, 1891
Kittyhawk, N. C.	8.14	15, 1883	Sugar Ex. Station, La.	5.55	15, 1892
Vesper, Kans.	8.10	19, 1890	Washington, Ga.	5.40	26, 1891
Grantsburg, Wis.	7.75	19-20, 1889	Fort Smith, Ark.	5.40	19-20, 1890
Johnstown, Va.	7.70	18, 1879	Lillington, N. C.	5.02	22-23, 1891
Marshall, Mo.	7.48	18-19, 1891	Thomasville, Ga.	5.02	15-16, 1892

*Cloudburst; rainfall not all measured.
One hour and less.

Station and state.	Amount.	Time.	Date.
	Inches.	A. m.	
Boston, Mass.	0.50	0 05	12, 1892
Savannah, Ga.	0.50	0 05	28, 1891
Atlanta, Ga.	0.45	0 05	1, 1892
Indianapolis, Ind.	0.45	0 05	19, 1891
Jacksonville, Fla.	0.45	0 05	19, 1892
Wilmington, N. C.	0.45	0 05	18, 1887
New York, N. Y.	0.43	0 05	18, 1887
Galveston, Tex.	0.40	0 05	4, 1891
Kansas City, Mo.	0.40	0 05	15, 1891
Eastport, Me.	0.40	0 05	12, 1891
Saint Louis, Mo.	0.40	0 05	7, 1892
Tampa, Fla.	0.40	0 05	9, 1892
Galveston, Tex.	0.39	0 05	22, 1891
Norfolk, Va.	0.38	0 05	31, 1892
Philadelphia, Pa.	0.36	0 05	28, 1891
Cleveland, Ohio	0.35	0 05	19, 1892
Dodge City, Kans.	0.35	0 05	23, 1892
Jupiter, Fla.	0.35	0 05	2, 1890
Saint Louis, Mo.	0.35	0 05	11, 1891
Saint Paul, Minn.	0.35	0 05	20, 1891
Atlanta, Ga.	0.35	0 05	18, 1891
Dodge City, Kans.	0.34	0 05	12, 1891

Precipitation to equal or exceed 1 inch in 1 hour—Continued.

Station and state.	Amount.	Time.	Date.
	Inches.	A. m.	
Savannah, Ga.	0.33	0 05	10, 1892
Memphis, Tenn.	0.32	0 05	26, 1890
Galveston, Tex.	0.31	0 05	9, 1892
Bismarck, N. Dak.	0.30	0 05	27, 1892
Buffalo, N. Y.	0.30	0 05	19, 1892
Jupiter, Fla.	0.30	0 05	14, 1892
New York, N. Y.	0.30	0 05	23, 1891
Washington, D. C.	0.30	0 05	1, 1890
Norfolk, Va.	0.30	0 05	26, 1891
Eastport, Me.	0.27	0 05	5, 1892
Indianapolis, Ind.	0.25	0 05	19, 1892
Wilmington, N. C.	0.25	0 05	30, 1892
Boston, Mass.	0.80	0 10	12, 1892
Jacksonville, Fla.	0.80	0 10	31, 1892
Tampa, Fla.	0.80	0 10	9, 1892
Galveston, Tex.	0.75	0 10	4, 1890
Atlanta, Ga.	0.65	0 10	1, 1892
Dodge City, Kans.	0.60	0 10	9, 1892
Key West, Fla.	0.60	0 10	30, 1891
New York, N. Y.	0.59	0 10	4, 1888
Bismarck, N. Dak.	0.56	0 10	27, 1892
Cleveland, Ohio	0.56	0 10	19, 1892
Norfolk, Va.	0.57	0 10	31, 1892
Saint Louis, Mo.	0.51	0 10	7, 1892
Jupiter, Fla.	0.50	0 10	14, 1892
Salisbury, N. C.	0.50	0 10	13, 1888
Charleston, S. C.	1.41	0 18	9, 1890
Lead Hill, Ark.	1.00	0 18	2, 1882
Escanaba, Mich.	1.27	0 20	11, 1877
Marksville, La.	1.25	0 20	27, 1892
Albany, N. Y.	1.20	0 20	2, 1878
Glenville, W. Va.	1.14	0 20	12, 1892
Nashville, Tenn.	1.10	0 20	17, 1891
Emporium, Pa.	1.05	0 20	5, 1890
Parkersburg, W. Va.	1.01	0 20	1, 1890
Mossing Ford, Va.	1.00	0 20	2, 1890
Abilene, Tex.	1.00	0 20	29, 1892
Louisville, Ky.	1.26	0 23	20, 1878
Hardin, Colo.	1.52	0 24	13, 1890
Galveston, Tex.	1.55	0 25	17, 1871
Ithaca, N. Y.	1.47	0 25	4, 1892
Colorado Springs, Colo.	2.75	0 30	14, 1890
Mesquite, Tex.	2.50	0 30	10, 1875
Lebo, Kans.	2.01	0 30	22, 1892
Wellsboro, Pa.	1.95	0 30	21, 1885
Vevay, Ind.	1.90	0 30	13, 1879
Grantsburg, Wis.	1.88	0 30	7, 1889
Manistee, Mich.	1.67	0 30	8, 1892
Queensbury, N. Y.	1.50	0 30	14, 1890
Mount Auburn, Ohio	1.52	0 30	26, 1880
Providence, R. I.	3.50	0 35	6, 1878
Auburn, N. H.	3.00	0 35	27, 1877
Hulmeville, Pa.	2.20	0 35	25, 1880
Pittsburg, Pa.	1.85	0 35	16, 1884
Cincinnati, Ohio	1.85	0 35	27, 1882
Sharon Springs, Kans.	2.00	0 40	20, 1892
Jacksonville, Fla.	3.72	0 41	20, 1873
Philo, Ill.	2.63	0 45	5, 1892
Hudson, Wis.	2.50	0 45	11, 1891
Detroit, Mich.	2.48	0 45	31, 1878
Sandusky, Ohio	2.25	0 45	24, 1892
Charlotte, N. C.	2.01	0 45	3, 1890
Weldon, N. C.	3.43	0 50	22, 1892
Fort Union, N. Mex.	2.34	0 50	12, 1883
Princeton, Mo.	4.00	1 05	15, 1891
Campo, Cal.	11.50	1 20	12, 1891
Plover, Wis.	4.50	1 30	3, 1890

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Georgia, Illinois, Michigan, Nebraska, and North Carolina. 2d, Illinois. 3d, Michigan, Minnesota, New York, and Ohio. 4th, Indiana, New York, Ohio, Pennsylvania, and West Virginia. 5th, Illinois and Maine. 6th, Colorado, Nebraska, New Hampshire, New York, North Dakota, and Vermont. 7th, Florida, Minnesota, North Carolina, and South Dakota. 8th, Iowa, Minnesota, Nebraska, Nevada, South Dakota, and Wisconsin. 9th, Iowa, Missouri, Nebraska, and New York. 10th, Colorado, Minnesota, Nebraska, North Dakota, and South Dakota. 11th, South Dakota. 12th, Minnesota, Nebraska, North Dakota, and South Dakota. 13th and 14th, South Dakota. 17th, Nebraska and North Dakota. 18th, Missouri. 19th, Arizona, Indiana, New York, and West Virginia. 20th, Colorado, Kansas, Missouri, Nebraska, and South Dakota. 21st, Colorado and Pennsylvania. 22d, Colorado, Louisiana, Oklahoma, Utah, Virginia, and West Virginia. 23d, Kansas, Louisiana, Nevada, New Mexico, and Oklahoma. 24th, Colorado, Idaho, Indiana, Nebraska, New Mexico, and New York. 25th, Colorado and Oklahoma. 27th, Colorado, Kansas,

Minnesota, North Dakota, Oklahoma, and South Dakota. 28th, Colorado, Kansas, Minnesota, Missouri, Nebraska, and

North Dakota. 29th, Alabama, Kansas, Nebraska, and Oklahoma. 31st, Iowa and North Dakota.

WINDS.

The prevailing winds for August, 1892, are shown on Chart II by arrows flying with the wind. In New England the winds were generally from the southwest; in the middle Atlantic states and along the south Pacific coast, from southwest to northwest; in the south Atlantic and Gulf states and over the southern plateau region, from southeast to southwest; over the Florida Peninsula and in the Missouri Valley, from east to south; in the upper Mississippi valley, from northeast to southeast; on the middle-eastern slope of the Rocky Mountains and over the northern plateau region, southerly; on the southeast slope of the Rocky Mountains, from south to west; on the north Pacific coast, from west to north; on the immediate middle Pacific coast, from west to northwest; and in the Sacramento Valley, from southeast to south. In the Ohio Valley and Tennessee, the Lake region, extreme northwest, on the northeast slope of the Rocky Mountains, and over the middle plateau region the winds were variable.

HIGH WINDS.

[In miles per hour.]

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 12th, 50, e., at Moorhead, Minn. 13th, 56, s., at Fort Canby, Wash.; 54, ne., at Oklahoma City, Okla.; 52, n., at Sioux City, Iowa; 50, ne., at Dodge City, Kans. 14th, 52, ne., at Huron, S. Dak. 15th, 60, nw., at Mount Washington, N. H. 17th, 52, s., at Pensacola, Fla.

LOCAL STORMS.

1st.—At Monroe, N. C., a thunder, rain, and hail storm moved northeast in a path one-half mile in width at 5.30 p. m. A man was reported killed by lightning at Shelby, N. C. One man was killed and another injured by lightning at Greenwood, S. C. A man was reported killed by lightning at Columbus, Ohio. A severe wind, rain, and hail storm caused some damage in the southern part of Chicago, Ill. During a thunderstorm in the early morning lightning struck in several places in Grand Haven, Mich. At Fruitport, 7 miles northeast of Grand Haven, buildings were unroofed and trees blown down. A severe thunder and rain storm visited Orange, Tex., in the evening.

3d.—At North Liberty, N. Y., roofs and orchards were damaged during a thunder and hail storm. A schooner was struck by lightning at Savannah, Ga. At Toledo, Ohio, a thunderstorm from the west, with rain and hail, began at 7.40 p. m. and ended 11.40 p. m.; lightning struck in several places, and the electric car service was suspended for 30 minutes. A man was killed by lightning near Grand Haven, Mich. A thunder, rain, and hail storm in the afternoon caused damage about Kalamazoo, Mich. Damage by lightning was reported at Lansing, Mich. The northern counties of Minnesota were swept by a destructive wind and hail storm at night. Considerable damage of a minor character was caused at South Bend, Ind., by a thunderstorm.

4th.—A house was struck by lightning at Westminster, Vt.; damage \$1,000. Trees were struck by lightning at Royalston, Mass. Several barns about New Castle and New Carlisle, Ind., were struck by lightning and burned. A sandstorm, with some thunder and lightning, was reported in Maricopa county, Ariz., in the afternoon.

5th.—At Eastport, Me., a thunderstorm, with light hail for 30 seconds, began 8.30 and ended 10.30 a. m.; 4 houses were struck and 2 persons were stunned by lightning. During a thunderstorm in the afternoon 2 persons were killed by lightning near Boston, Mass. A heavy thunder and rain storm

moved northeast over Titusville, Fla., from 12.15 to 1.20 p. m.; the wind reached a velocity of 44 miles per hour in a southwest squall. Destructive thunderstorms were reported in southern Illinois. One person was reported killed by lightning at Two Rivers, Wis. A building was struck by lightning at Monroe, Wis. A severe storm visited Marshall, Minn., in the morning; 3 persons were seriously injured, and property was destroyed to the estimated value of \$3,500. A thunderstorm visited Red Wing, Minn., in the early morning; 2 houses near Red Wing were struck by lightning.

6th.—A thunder and hail storm occurred in the northern parts of Sullivan and Merrimack counties, N. H., damaging crops, etc., in a narrow path about 15 miles in length. At Rantoul, Ill., stock was killed during a thunderstorm.

7th.—A house was struck by lightning at Wilmington, N. C. Destructive hailstorms were reported in southern Minnesota. Damage was caused by lightning at Huron, S. Dak.

8th.—A number of persons were shocked by lightning at Parkersburg, W. Va. At Manistee, Mich., a severe thunderstorm began 9 a. m. and ended 10.30 a. m.; 1.67 inch of rain fell in 30 minutes, flooding streets. In the early morning 3 houses were struck by lightning and damage was caused by high wind at Saint Paul, Minn. Damage was caused by high wind at Minneapolis, Minn., in the early morning. At Lake Stay, Minn., several buildings were blown down during a thunder and hail storm. Several buildings were struck by lightning at Stillwater, Minn. Crops and buildings were damaged by hail about Lake Benton, Minn. A thunderstorm, with high wind, rain, and large hail, damaged grain about Canby, Minn. Hail damaged grain about Marshall and Saint Cloud, Minn. A child was killed by lightning in the morning near Green Bay, Wis. During a heavy rain and wind storm one person was killed and damage was caused to property near Depere, Wis. At Watertown, S. Dak., buildings were unroofed and crops damaged during a rain and hail storm. A house was struck by lightning at Sioux City, Iowa. Lightning struck in several places at Prescott, Ariz.

9th.—At Royalston, Mass., a house was struck by lightning. A thunderstorm, with heavy rain and high wind, visited Cohoes, N. Y., in the afternoon. A heavy rain and thunder storm occurred at Syracuse, N. Y., in the morning. Hail and high wind damaged crops about New Lisbon, N. Y. During a thunderstorm at night several buildings were struck by lightning at Dyberry, Pa. Two houses in Saint Louis, Mo., were struck by lightning in the afternoon. A thunderstorm injured crops about Fayette, Iowa. Stock was killed by lightning near Monticello, Iowa. One person was killed and another injured by lightning at Laporte, Iowa. At Topeka, Kans., a heavy rain and wind storm occurred in the early evening; the wind reached a velocity of 60 miles per hour from the southwest; one person was killed and much damage was caused to buildings.

10th.—Several buildings were struck by lightning at West Milan, N. H. A severe thunderstorm occurred at Albany, N. Y., in the evening. Heavy storms were reported in eastern New York, and a destructive cloudburst visited Wilkesbarre, Pa., in the afternoon. In the evening corn and wheat about Valentine, Nebr., were damaged by a thunder, rain, wind, and hail storm.

11th.—A number of persons were injured by lightning at Tilton, N. H. A cloudburst caused great damage in Chittenden county, Vt. An exceptionally severe thunder and rain storm occurred at night in Massachusetts and Connecticut; several persons were reported killed by lightning. A boy was stunned by lightning at Beverly, N. J. In the afternoon 2

houses were struck and 3 persons stunned by lightning at Knoxville, Tenn.

12th.—A heavy rainstorm, with some thunder, occurred at Manchester, N. H., in the early morning; streets and cellars were flooded. The storm was also severe over eastern Massachusetts. At Heath, Mass., one man was killed and another stunned by lightning. During a thunderstorm at Port Royal, S. C., 1.25 inch of rain fell in 30 minutes. A heavy thunder and rain storm occurred at Memphis, Tenn., in the evening; in the eastern suburbs bridges were washed away and street car traffic was suspended for several hours. At Moorhead, Minn., a thunderstorm began 8.30 p. m. and continued until after midnight; rain fell in torrents; the wind shifted from southeast to northeast and reached a velocity of 50 miles per hour; great damage was caused by hail north and east of Moorhead. Lightning killed stock and fired hay stacks north of Fargo, N. Dak. A church was struck by lightning at Sioux City, Iowa.

13th.—A wind and hail storm from the northwest unroofed buildings and damaged grain at Elkton, S. Dak. A house was struck by lightning at Buffalo, Kans. A destructive local storm was reported 16 miles northeast of Grapevine, Tex.; buildings were destroyed and cotton and corn damaged.

14th.—At Huron, S. Dak., a severe thunderstorm, with small hail, began in the early morning and ended at 8.30 a. m. At 8.30 a. m. the wind backed from southeast to northeast and reached a velocity of 50 miles per hour.

19th.—A heavy thunder, wind, and rain storm passed about 20 miles north of Ithaca, N. Y., in the evening, causing considerable damage. In the early afternoon a number of buildings were struck by lightning about Erie, Pa. Three men were killed by lightning at Union City, Ind. Lightning struck in several places at Olney, Ill.

20th.—A man was killed by lightning at Springfield, Mo. A number of buildings were wrecked by high wind at Springfield, Kans. Two men were killed and 3 men were badly injured by lightning near Grant, Nebr.

21st.—Three persons were shocked by lightning during a severe thunderstorm at Homer, La.

22d.—A destructive cloudburst was reported at Roanoke, Va.; one man was drowned; the streets were flooded to a depth of 3 to 5 feet, and the damage to property was estimated at \$100,000. Two persons were reported killed by lightning at Vernon, Tex. An exceptionally heavy rainstorm was reported at Fort Bowie, Ariz.

23d.—A heavy thunderstorm visited Augusta, Ga., in the afternoon; two buildings were struck by lightning. Heavy rain flooded streams on the western mountain slopes near Fort Stanton, N. Mex.

24th.—One person was killed by lightning near Wilming-

ton, N. C. At Erie, Pa., a thunderstorm continued from 3.10 p. m. until midnight; a house was struck by lightning. A house was struck by lightning at Pensacola, Fla. Near Thornville, Mich., a barn was struck by lightning and burned.

25th.—Exceptionally heavy rain fell in New York, except in the southeastern part of the state. At North Hammond, N. Y., 6.40 inches of rain fell in 24 hours. A report from Jamestown, N. Y., states that Chautauqua Lake rose 30 inches in 10 hours.

26th.—At Boston, Mass., rain began in the morning and continued until the early morning of the 27th, and the wind reached a velocity of 36 miles per hour.

28th.—A house was struck by lightning at Tampa, Fla. A thunderstorm occurred at New Orleans, La. A severe rain and hail storm moved east over the northern part of Morton county, Kans., in a path one mile in width, damaging buildings and leveling corn and grain.

29th.—A heavy hail, wind, and rain storm visited Evergreen, Ala. A man was killed by lightning near Abbeville, Ala. An unusually severe rain and thunder storm occurred at Mobile, Ala., in the evening. At Springfield, Ill., a building was struck by lightning in the evening. A man was killed by lightning at Sun Prairie, Wis. At Clarinda, Iowa, a church was struck by lightning and burned. A barn was struck by lightning and burned near Clarinda. At Concordia, Kans., high wind demolished frail buildings, and damage was caused by heavy rain in the early morning.

30th.—A man was killed by lightning at Columbia, Ala. High wind, reaching a velocity of 30 miles per hour at 8.45 p. m., and heavy seas prevailed at Grand Haven, Mich. A number of vessels were compelled to run into that port for shelter. In the evening a schooner was capsized 14 miles north of Manistee; the crew, consisting of 8 persons, were drowned, and the vessel was a total loss. At Detroit, Mich., the wind reached a maximum velocity of 33 miles per hour at 7.12 p. m.; a large steamer was lost 60 miles west of Whitefish Point, and passengers and crew, numbering 28 persons, were, with one exception, drowned. Disasters were reported at other points on the upper lakes.

31st.—A heavy rain and thunder storm prevailed at New Brunswick, N. J., from 12.15 to 1.10 p. m. At Wilmington, N. C., a thunderstorm began 12.13 p. m. and ended 2.30 p. m.; .40 inch of rain fell in 5 minutes, .68 inch in 10 minutes, and 1.10 inch in 20 minutes. After a short interval the storm recommenced and continued until after midnight; 2 houses were struck by lightning. At Pensacola, Fla., a house was struck by lightning. At San Antonio, Tex., a heavy rain and thunder storm began 6.20 and ended 9.05 a. m., during which time 3.20 inches of rain fell, and the temperature fell 22°; streams rose rapidly, causing considerable damage.

ATMOSPHERIC ELECTRICITY.

THUNDERSTORMS.

Description of the more severe thunderstorms reported for the month is given under "Local storms."

Thunderstorms were reported as follows: East of the Rocky Mountains they were reported in the greatest number of states, 35, on the 9th and 10th; in 32 on the 4th and 11th; in 20 to 30 on the 1st, 2d, 5th to 8th, 12th, 19th to 27th, and 29th; in 10 to 19 on the 3d, 13th, 14th, 16th, 17th, 18th, 28th, 30th, and 31st; and in 9 on the 15th.

East of the Rocky Mountains thunderstorms were reported on the greatest number of dates, 31, in Florida; on 20 to 30 in Alabama, Georgia, Iowa, Kansas, Louisiana, Michigan, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, South Carolina, South Dakota, Tennessee, and Texas; on 10 to 19 in Arkansas, Connecticut, Illinois, Indiana, Mary-

land, Massachusetts, Minnesota, Montana, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Wisconsin. The only states or territories for which thunderstorms were reported on less than 10 dates were, the District of Columbia on 3, and Indian Territory on 4 dates.

West of the Rocky Mountains thunderstorms were reported in Arizona on the 1st, 2d, 4th to 9th, 13th to 23d, 25th, 27th, 29th, 30th, and 31st; in California on the 3d, 4th, 30th, and 31st; in Colorado on the 2d to 12th, 16th to 28th, and 31st; in Idaho on the 2d, 19th, and 24th; in Nevada on the 1st to 8th, 10th, 11th, 16th, 17th, 19th to 24th, 30th, and 31st; in New Mexico on the 3d to 24th, 26th, 27th, and 28th; in Utah on the 4th to 11th, and 17th to 24th; in Washington on the 3d, 4th, 10th, and 24th; and in Wyoming on the 4th, 6th, 8th, 9th, 19th, 21st, 22d, and 24th.

AURORAS.

Auroral displays of August, 1892.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
6	Sault Ste. Marie, Mich..	180 to 270	25	Arch of green color resting on dark segment.
8	Hayre, Mont.....	Cov'd 180	Zenith	An arch, with beams.
12	Philadelphia, Pa.....	In north.	25	A diffused white light, with beams, which had a lateral movement toward the west.
12-13	Sault Ste. Marie, Mich..	180 to 270	85	Green color.
12	Bismarck, N. Dak.....	135 to 250	30	Arch, with streamers.
12-13	Rapid City, S. Dak.....	.....	30	Pale beams moved from east to west.

Auroral displays of July, 1892—Continued.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
12	Lander, Wyo.....	.....	.....	Two white beams tinged with green, and yellow beams along horizon.
17	Sault Ste. Marie, Mich..	135 to 225	20	Green color.
19	Sault Ste. Marie, Mich..	180 to 270	20	Green color.
23	Northfield, Vt.....	190 to 235	15	Pale green color.
23	Fort Buford, N. Dak....	190 to 235	15	Diffused white light, with streamers.
24	Duluth, Minn.....	Cov'd 90	Zenith	Beams of bright light.
28	Alpena, Mich.....	135 to 190	35	Streamers of white light.

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS.

The following table shows the danger-points at the various river stations; the highest and lowest stages for the month, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, August, 1892 (in feet and tenths).

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Red River.</i>						
Shreveport, La	29.9	6.0	1	1.0	25	5.0
<i>Arkansas River.</i>						
Fort Smith, Ark	22.0	5.2	31	1.5	26	3.7
Little Rock, Ark	23.0	8.5	1, 31	7.0	13	1.5
<i>Missouri River.</i>						
Fort Buford, N. Dak	11.0	1	6.6	28	4.4	
Bismarek, N. Dak	6.4	1	2.5	31	3.9	
Pierre, S. Dak	14.0	3.7	1	1.7	31	2.0
Sioux City, Iowa	18.7	10.8	1	6.3	28-30	4.5
Omaha, Nebr	18.0	11.0	1	7.8	30, 31	3.2
Kansas City, Mo	21.0	13.5	1	8.1	31	5.4
<i>Mississippi River.</i>						
Saint Paul, Minn	14.0	6.4	1	3.3	29	3.1
La Crosse, Wis	11.8	6.9	3	2.8	29	4.1
Dubuque, Iowa	16.0	7.9	7-9	4.2	31	3.7
Davenport, Iowa	15.0	5.6	10-13	3.2	31	2.4
Keokuk, Iowa	14.0	6.4	1	3.7	26	2.7

Heights of rivers—Continued.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Mississippi River—Continued.</i>						
Hannibal, Mo.....	17.0	7.8	1, 2	4.8	27, 28	3.0
Saint Louis, Mo.....	30.0	18.8	1	9.5	29-31	9.3
Cairo, Ill.....	40.0	20.7	1	10.3	31	10.4
Memphis, Tenn.....	33.0	17.6	1	7.8	31	9.8
Vicksburg, Miss.....	41.0	36.6	1	11.6	31	25.0
New Orleans, La.....	13.0	13.5	1	4.7	29-31	8.8
<i>Ohio River.</i>						
Parkersburg, W. Va.....	38.0	7.0	1, 2	2.7	12	4.3
Cincinnati, Ohio.....	45.0	10.8	7	5.5	30, 31	5.3
Louisville, Ky.....	24.0	5.8	9	3.6	31	2.2
<i>Cumberland River.</i>						
Nashville, Tenn.....	40.0	3.5	1	1.7	22	1.8
<i>Tennessee River.</i>						
Chattanooga, Tenn.....	33.0	4.9	6	2.7	25	2.2
<i>Monongahela River.</i>						
Pittsburg, Pa.....	29.0	6.7	29	5.0	13	1.7
<i>Savannah River.</i>						
Augusta, Ga.....	32.0	11.9	26	6.7	23	5.2
<i>Willamette River.</i>						
Portland, Oregon.....	15.0	8.0	1	2.5	31	5.5
<i>Susquehanna River.</i>						
Harrisburg, Pa.....	17.0	4.2	16	1.8	3, 24	2.4
<i>Alabama River.</i>						
Montgomery, Ala.....	48.0	18.5	20	2.4	6, 7	16.1

STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for August, 1892, of the directors of the various state weather services:

ALABAMA.

Temperature.—The mean was 0.2 below the normal; maximum, 100, at Brewton, 12th; minimum, 56, at Valley Head, 4th and 14th; greatest monthly range, 38, at Jasper; least monthly range, 16, at Chepultepec.

Precipitation.—The average was 2.08 above the normal; greatest monthly, 13.55, at Brewton; least monthly, 2.19, at Carrollton.

Wind.—Prevailing direction, east.—*P. H. Mell, Observer, Weather Bureau, Auburn, director.*

ARIZONA.

Temperature.—Maximum, 123, at Fort Mohave, 5th; minimum, 46, at Fort Apache, 30th, and at Holbrook, 30th and 31st; greatest monthly range, 60, at Fort Mohave; least monthly range, 28, at Farleys Camp.

Precipitation.—Greatest monthly, 3.40, at Walnut Ranch; least monthly, 0.00, at Fort Mohave, Phoenix, and Rancho del Pueblo.

Wind.—Prevailing direction, southwest.—*J. C. Hayden, Observer, Weather Bureau, Tucson, director.*

ARKANSAS.

Temperature.—The mean was 0.2 above the normal; maximum, 106, at Keesees Ferry, 6th; minimum, 47, at Fayetteville, 31st; greatest monthly range, 54, at Keesees Ferry; least monthly range, 24, at Greenville, Miss.

Precipitation.—The average was 1.58 above the normal; greatest monthly, 8.54, at Dallas; least monthly, 0.78, at Harrison.

Wind.—Prevailing direction, south.—*M. F. Locke, Commissioner of Agriculture, Little Rock, director; F. H. Clarke, Local Forecast Official, Weather Bureau, assistant.*

CALIFORNIA.

Temperature.—The mean was 0.2 below the normal; maximum, 117, at

Needles, 4th and 17th; minimum, 38, at Nordhoff, 11th; greatest monthly range, 72, at Nordhoff; least monthly range, 14, at Ventura.

Precipitation.—The average was 0.06 below the normal; greatest monthly, 0.11, at Julian; least monthly, 0.00, at a number of stations.

Wind.—Prevailing direction, west.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

COLORADO.

Temperature.—The mean was 2.0 above the normal; maximum, 108, at Lamar, 4th; minimum, 21, at Breckenridge, 30th; greatest monthly range, 76, at Steamboat Spring; least monthly range, 43, at Cumbres.

Precipitation.—The average was 1.00 below the normal; greatest monthly, 5.29, at Avoca; least monthly, 0.00, at Rico, Saint Cloud, and Steamboat Spring.

Wind.—Prevailing direction, west.—*W. S. Miller, Observer, Weather Bureau, Denver, director.*

FLORIDA.

Temperature.—Maximum, 101, at Micco, 12th; minimum, 67, at Plant City, 8th; greatest monthly range, 33, at Micco; least monthly range, 15, at Clermont.

Precipitation.—Greatest monthly, 13.74, at Oxford; least monthly, 1.59, at Key West.

Wind.—Prevailing direction, southeast.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

GEORGIA.

Temperature.—Maximum, 100, at Cordele, 1st; minimum, 58, at Lafayette, 14th; greatest monthly range, 39, at Adairsville; least monthly range, 18, at Hepzibah.

Precipitation.—Greatest monthly, 13.89, at Thomasville; least monthly, 2.23, at Hepzibah.

Wind.—Prevailing direction, west.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

IDAHO.

Temperature.—Maximum, 102, at Boise Barracks, 3d, and at Payette, 20th; minimum, 23, at Henrys Lake, 29th; greatest monthly range, 70, at Boise Barracks; least monthly range, 44, at Ruthburg.

Precipitation.—Greatest monthly, 1.12, at Kootenai; least monthly, 0.00, at Boise Barracks, Payette, and Ruthburg.

Wind.—Prevailing direction, south.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

ILLINOIS.

Temperature.—The mean was 0.4 above the normal of the last 17 years; maximum, 100, at Greenville, 8th; minimum, 41, at Philo, 31st.

Precipitation.—The average was 0.92 above the normal of the last 14 years; greatest monthly, 6.07, at Pana; least monthly, 0.32, at Hennepin.

Wind.—Prevailing direction, northeast.—*John Craig, Observer, Weather Bureau, Springfield, director.*

INDIANA.

Temperature.—The mean was 2.0 above the normal; maximum, 98, at Angola, 18th; minimum, 42, at Connersville, 31st; greatest monthly range, 48, at Connersville, Rockville, Lafayette, and Logansport; least monthly range, 28, at New Albany.

Precipitation.—The average was 0.74 below the normal; greatest monthly, 5.27, at Butler; least monthly, 0.87, at Hawpatch.

Wind.—Prevailing direction, northeast.—*Prof. H. A. Huston, Lafayette, director; C. F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

IOWA WEATHER AND CROP SERVICE.

Temperature.—The mean was about normal; maximum, 102, at Atlantic and Glenwood, 8th; minimum, 40, at Ames, 31st; greatest monthly range, 53, at Ames, Glenwood, and Blockton; least monthly range, 32, at Richland.

Precipitation.—The average was about 1.00 below the normal; greatest monthly, 4.69, at Larrabee; least monthly, 0.65, at Maxon.

Wind.—Prevailing direction, southeast.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

KANSAS.

Temperature.—The mean was 0.1 below the normal; maximum, 111, at Lakin, 4th; minimum, 36, at Hays City, 23d; greatest monthly range, 67, at Hays City; least monthly range, 43, at Lawrence.

Precipitation.—The average was 0.84 above the normal; greatest monthly, 7.76, at Heaston; least monthly, 0.15, at Lakin.

Wind.—Prevailing direction, south.—*Prof. J. T. Lovewell, Topeka, director; T. B. Jennings, Observer, Weather Bureau, assistant.*

KENTUCKY.

Temperature.—The mean was about normal; maximum, 96, at Shelbyville, 8th and 9th; minimum, 45, at Shelbyville, 31st; greatest monthly range, 51, at Shelbyville; least monthly range, 26, at Caddo.

Precipitation.—The average was about 0.50 below the normal; greatest monthly, 8.45, at Williamsburg; least monthly, 1.23, at Canton.

Wind.—Prevailing direction, southwest.—*Frank Burke, Observer, Weather Bureau, Louisville, director.*

LOUISIANA.

Temperature.—The mean was 1.3 below the normal; maximum, 100, at Schriever, 5th; minimum, 53, at Winnsboro, 31st; greatest monthly range, 43, at Winnsboro; least monthly range, 18, at Port Eads.

Precipitation.—The average was 1.57 above the normal; greatest monthly, 9.76, at Clinton; least monthly, 2.10, at Winnsboro.

Wind.—Prevailing direction, southwest.—*George E. Hunt, Local Forecast Official, Weather Bureau, New Orleans, director.*

MARYLAND.

Temperature.—Maximum, 101, at Cumberland (a), 9th; minimum, 56, at Boettcherville, 20th, and at Edgemont, 14th; greatest monthly range, 43, at Edgemont; least monthly range, 15, at Jewell.

Precipitation.—Greatest monthly, 4.10, at Fallston; least monthly, 0.58, at Taneytown.

Wind.—Prevailing direction, northwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; Prof. Milton Whitney, Maryland Agricultural College, secretary and treasurer; C. P. Cronk, Observer, Weather Bureau, in charge.*

MICHIGAN.

Temperature.—The mean was 2.0 above the normal; maximum, 98, at Washington, 9th; minimum, 29, at McMillan, 20th; greatest monthly range, 61, at Sand Beach; least monthly range, 35, at White Pigeon.

Precipitation.—The average was 0.42 below the normal; greatest monthly, 8.71, at Harrisville; least monthly, 0.45, at Marquette.

Wind.—Prevailing direction, southwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

MISSISSIPPI.

Temperature.—The mean was 0.6 below the normal; maximum, 100, at

Lake and Vaiden, 21st; minimum, 50, at Corinth, 24th and 25th; greatest monthly range, 44, at Corinth; least monthly range, 21, at Ship Island.

Precipitation.—The average was 1.21 above the normal; greatest monthly, 9.66, at Ship Island; least monthly, 0.77, at Lake.

Wind.—Prevailing direction, southeast.—*R. B. Fulton, Observer, Weather Bureau, University, director.*

NEBRASKA.

Temperature.—Maximum, 108, at Mullen, 7th; minimum, 36, at Kimball, 30th; greatest monthly range, 68, at Kimball; least monthly range, 42, at Falls City.

Precipitation.—Greatest monthly, 6.90, at West Point; least monthly, 1.16, at Gering.

Wind.—Prevailing direction, southeast.—*Prof. Goodwin D. Swezey, Crete, director; G. A. Loveland, Observer, Weather Bureau, assistant.*

NEVADA.

Temperature.—The mean was 0.9 below the normal; maximum, 105, at Elko, 1st; minimum, 20, at Sunnyside, 27th.

Precipitation.—The average was 0.83 below the normal; greatest monthly, 0.75, at Pioche; least monthly, 0.00, at a number of stations.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

NEW ENGLAND.

Temperature.—The mean was 0.1 above the normal; maximum, 97, at Taunton (d), 10th; minimum, 34, at West Milan, 23d; greatest monthly range, 52, at Stratford; least monthly range, 26, at Woods Holl.

Precipitation.—The average was 1.05 above the normal; greatest monthly, 11.23, at Grafton; least monthly, 0.42, at Adams (b).

Wind.—Prevailing direction, southwest.—*J. Warren Smith, Observer, Weather Bureau, Boston, Mass., director.*

NEW JERSEY.

Temperature.—The mean was 1.4 above the normal; maximum, 99, at New Brunswick, 9th; minimum, 45, at Tenaflly, 23d; greatest monthly range, 45, at Belvidere and Tenaflly; least monthly range, 25, at Atlantic City.

Precipitation.—The average was 1.11 below the normal; greatest monthly, 5.65, at Vineland; least monthly, 0.72, at Cape May.

Wind.—Prevailing direction, southwest.—*E. W. McGann, Observer, Weather Bureau, New Brunswick, director.*

NEW MEXICO.

Temperature.—Maximum, 105, at Embudo, 17th; minimum, 26, at Dulce, 29th; greatest monthly range, 70, at Dulce; least monthly range, 28, at La Luz.

Precipitation.—Greatest monthly, 1.52, at Hills Ranch; least monthly, 0.00, at Los Lunas.

Wind.—Prevailing directions, southeast, southwest, and west.—*H. B. Hersey, Observer, Weather Bureau, Santa Fe, director.*

NEW YORK.

Temperature.—The mean was 0.5 below the normal; maximum, 98, at Eden Center, 8th; minimum, 41, at Arcade, 7th; greatest monthly range, 51, at Mount Morris; least monthly range, 31, at Setauket and Willets Point.

Precipitation.—The average was 2.55 above the normal; greatest monthly, 11.78, at North Hammond; least monthly, 2.91, at Watkins.

Wind.—Prevailing direction, southwest.—*Prof. E. A. Fuytes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

NORTH CAROLINA.

Crops were considerably damaged by drought throughout the state.

Temperature.—The mean was 1.4 above the normal; maximum, 105, at Chapel Hill, 10th; minimum, 49, at Bakersville, 14th; greatest monthly range, 51, at Douglas; least monthly range, 15, at Hatteras.

Precipitation.—The average was 2.32 below the normal; greatest monthly, 10.15, at Horse Cove; least monthly, 0.82, at Chapel Hill.

Wind.—Prevailing direction, southwest.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

NORTH DAKOTA.

Drought prevailed in the western portion of the state and caused much damage to grain and grass.

Temperature.—The mean was 2.4 above the normal; maximum, 105, at Woodbridge, 15th; minimum, 24, at Woodbridge, 30th; greatest monthly range, 81, at Woodbridge; least monthly range, 54, at Saint John.

Precipitation.—The average was 0.23 above the normal; greatest monthly, 4.07, at Wild Rice; least monthly, 0.36, at Yule.

Wind.—Prevailing direction, southeast.—*W. H. Fallon, Observer, Weather Bureau, Bismarck, director.*

OHIO.

Temperature.—The mean was 1.0 above the normal; maximum, 99, at Leipsic, 16th; minimum, 45, at Orangeville, 29th; greatest monthly range, 51, at Van Wert; least monthly range, 35, at Gratiot.

Precipitation.—The average was 0.31 below the normal; greatest monthly, 6.15, at Ohio State University; least monthly, 0.76, at Hackney.

Wind.—Prevailing direction, southwest.—*Prof. B. F. Thomas, Columbus, director; C. M. Strong, Observer, Weather Bureau, secretary and assistant.*

OKLAHOMA.

Temperature.—Maximum, 109, at Gate City, 5th; minimum, 47, at Gate City, 30th; greatest monthly range, 62, at Gate City; least monthly range, 31, at Lehigh.

Precipitation.—Greatest monthly, 9.03, at South McAlester; least monthly, 1.72, at Guthrie.

Wind.—Prevailing direction, south.—J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.

PENNSYLVANIA.

Temperature.—The mean was 1.0 above the normal; maximum, 99, at Selins Grove, 9th; minimum, 42, at Saegerstown, 29th; greatest monthly range, 53, at Saegerstown; least monthly range, 32, at Erie and Dyberry.

Precipitation.—The average was 0.50 below the normal; greatest monthly, 7.64, at Columbus; least monthly, 1.07, at McConnellsburg.

Wind.—Prevailing direction, northwest.—Under direction of the Franklin Institute, Philadelphia; H. L. Ball, Observer, Weather Bureau, assistant.

SOUTH CAROLINA.

Temperature.—Maximum, 96, at Florence, 11th; minimum, 59, at Greenville, 19th.

Precipitation.—Greatest monthly, 9.72, at Columbia; least monthly, 1.38, at Statesburg.

Wind.—Prevailing direction, southwest.—A. P. Butler, Observer, Weather Bureau, Columbia, director.

SOUTH DAKOTA.

Temperature.—The mean was 2.2 above the normal; maximum, 110, at Hotch City, 16th; minimum, 31, at De Smet, 30th; greatest monthly range, 69, at Frankfort; least monthly range, 45, at Ashcroft.

Precipitation.—The average was 0.20 above the normal; greatest monthly, 6.33, at Millbank; least monthly, 0.63, at Pierre.

Wind.—Prevailing direction, southeast.—S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.

TENNESSEE WEATHER AND CROP SERVICE.

Temperature.—The mean was 1.0 above the normal; maximum, 98, at Milan, 7th, and at Covington (b), 8th; minimum, 52, at Clarksville, 31st; greatest monthly range, 44, at Covington; least monthly range, 25, at Bethel Springs.

Precipitation.—The average was 0.21 above the normal; greatest monthly, 8.17, at Jacksboro; least monthly, 2.07, at Lynnvile.

Wind.—Prevailing direction, southeast.—J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.

TEXAS.

Temperature.—The mean was 2.7 below the normal; maximum, 105, at Childress, 7th, and at Roby, 12th; minimum, 47, at Hartley, 31st; greatest monthly range, 55, at Hartley; least monthly range, 16, at Flower Bluff.

Precipitation.—The average was 1.88 above the normal; greatest monthly, 9.10, at Camp Eagle Pass; least monthly, 0.07, at El Paso.

Wind.—Prevailing direction, southeast.—D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.

UTAH.

Severe drought in the southern part of the territory caused a loss of cattle on the ranges.

Temperature.—Maximum, 113, at Saint George, 4th; minimum, 23, at Soldiers Summit, 28th, and at Scofield, 29th; greatest monthly range, 72, at Soldiers Summit; least monthly range, 55, at Logan.

Precipitation.—Greatest monthly, 2.13, at Soldiers Summit; least monthly, 0.00, at several stations.—G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.

VIRGINIA.

Temperature.—Maximum, 104, at Nottoway, 10th; minimum, 45, at Big Stone Gap, 31st; greatest monthly range, 48, at Nottoway; least monthly range, 27, at Birdsnest.

Precipitation.—Greatest monthly, 8.84, at Stannardsville; least monthly, 0.80, at Lynchburg.

Wind.—Prevailing direction, southwest.—Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.

WEST VIRGINIA.

Drought prevailed during the month and vegetation and pastures were more or less damaged.

Temperature.—Maximum, 96, at Morgantown, 17th; minimum, 41, at Davis, 14th and 15th; greatest monthly range, 47, at Davis; least monthly range, 22, at Huntington.

Precipitation.—Greatest monthly, 6.95, at Weston; least monthly, 0.71, at Spencer.

Wind.—Prevailing direction, west.—W. W. Dent, Observer, Weather Bureau, Parkersburg, director.

WISCONSIN.

Temperature.—The mean was about 1.0 below the normal; maximum, 96, at Richland Center, 8th; minimum, 32, at Rhinelander, 31st.

Precipitation.—The average was about 1.00 below the normal, except in a small area bordering on Lake Michigan, where it was slightly above; greatest monthly, 6.21, at Raymond; least monthly, 1.12, at Cadiz.

Wind.—Prevailing direction, southeast.—W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.

WYOMING.

Temperature.—Maximum, 105, at Wheatland, 4th; minimum, 29, at Camp Pilot Butte, 29th; greatest monthly range, 67, at Wheatland; least monthly range, 54, at Lander.

Precipitation.—Greatest monthly, 1.10, at Wheatland; least monthly, 0.00, at Casper.

Wind.—Prevailing direction, west.—E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.

CONTRIBUTIONS AND ORIGINAL ARTICLES.

THE WARM WAVES OF JULY AND AUGUST, 1892.

[By E. B. GARRIOTT, Weather Bureau.]

Warm waves and hot winds are distinctly dissimilar types of the same class of phenomena. In the United States warm waves are the result of cyclonic wind circulation whereby air over an extended area is replaced by air drawn from warmer and more southern latitudes. When the warm air passes for a lengthened period over districts where the soil is dry, where vegetation is not cooled by the evaporation of moisture, and where an absence of moisture in the air subjects the earth to the full force of the sun's rays, the dry, withering heat of the hot wind is experienced.

The periods of high temperature of the latter part of July and the early part of August were notable in that they partook somewhat of the character of both of the types referred to. The July warm wave produced exceptionally high temperatures; its prevalence was generally unattended, however, by hot winds, owing to previous abundant precipitation which had stored the earth with moisture. The warm wave of the first decade of August following closely the July dry and heated period was severely felt. In some districts drought conditions prevailed, and hot winds were destructive to vegetation.

The July warm wave appeared over Montana on the 18th, with maximum temperature 93° at Havre. It occupied the Missouri Valley from the 18th to the 27th, with daily maximum temperature above 90°, and a maximum of 100° at Omaha, Nebr., on the 23d. In the middle and upper Mississippi valleys the maximum was above 90° from the 22d to the 29th, with highest readings on the 24th, when 96° was registered at Saint Louis, Mo. In the Ohio Valley the heated period began on the 22d, and the daily maximum was above 90° until the 29th, with an extreme of 98° at Cincinnati, Ohio, on the 24th. In the middle Atlantic and New England states the intense heat continued from the 24th to the 30th, the highest temperature being reached on the 26th, when the maximum was 96° at Boston, Mass., 101° at Philadelphia, Pa., 99° at Washington, D. C., and 100° at Lynchburg, Va. The August

warm wave appeared over Montana on the 3d, with maximum temperature 97° and 98° at Havre and Miles City, respectively. It extended over the Missouri Valley on the 4th, where the temperature continued high until the 8th, with daily maximum above 100°. The heated period continued in the middle and upper Mississippi valleys from the 5th to the 9th, with daily maximum above 90°, the highest reading at Saint Louis, Mo., 97°, being noted on the 8th. In the Ohio Valley the temperature ranged high from the 6th to the 9th, although the heat was less intense than that experienced in July. Likewise in the middle Atlantic and New England states, where the warm wave lingered from the 8th to the 11th, the temperature was lower than in the latter part of July.

A prominent fact noted in the investigation of these and other periods of intense heat is the sluggish movement of the warm wave crests over the central valleys and the Eastern States; two to three days are required for the development of extreme temperatures, and several days are required for the earth and atmosphere to cool to the normal condition. The sluggish movement is apparently due to a stagnation of the more general atmospheric conditions, whereby winds are permitted to blow persistently from warmer latitudes. Warm waves of the central and eastern districts of the United States are attended by winds which blow not only from warmer latitudes, but also from the interior; they are attended by south to southwest winds. The conditions by which these winds are produced over the sections referred to are low barometric pressure over the north-central and northwestern districts, and high pressure over the southeastern states. A continuation of this distribution of pressure is necessary to the persistence of the warm wave and also to the attainment of exceptionally high temperature. The temperature in districts visited by a warm wave is at times higher than the temperature in regions to the windward; this is particularly true in the case of long continued warm periods. In such cases the hot wind element is developed. The earth's surface is gradually dried by the warm winds, and when the supply of moisture it contains is exhausted and it is no longer cooled by the evaporation of moisture it becomes heated; it acts as a receiver and storer of heat. The

overlying air receives no moisture and is heated both by the direct rays of the sun and by heat radiated from the hot earth.

During the warm periods of July and August the barometric pressure continued low in north-central and northwestern districts, high pressure obtained over the southeastern states, and southwesterly winds prevailed over the central and Eastern states. In districts visited by the warm waves little or no rain fell, and in each locality the heat became more intense day by day until relief came in the form of gradually cooling conditions and showers. During these periods areas of high and low barometric pressure showed marked inactivity. Observations of the lower atmosphere show, however, that the wind movements were greater than usual, except in the Ohio Valley. Mount Washington reports show a marked deficiency of wind before and after the crest of the warm waves crossed New England, and a decided excess of wind during the days of their passage. Wind records from stations in the Rocky Mountain regions show slight variations from the average wind movement.

Considered with reference to the area affected the warm wave may be considered a local phenomena; it is a feature of the cyclonic system of winds. It rarely covers one-half of the United States at one time, and during its prevalence over one part of the country unusually low temperatures obtain over other portions. During the early part of the July warm period the weather was cooler than usual on the north Pacific coast, and at the time the greatest heat was experienced over the Eastern States a marked deficiency was shown over the plateau and northern Rocky Mountain regions. During the August

warm period the weather was cooler than usual over extreme southern parts of the country and along the Pacific coast.

An area of low barometric pressure may traverse a large portion of the circumference of the Northern Hemisphere and carry with it elements for the development of warm waves in sections where conditions favor such development; that is over the continents. The cyclonic area which caused the August warm wave can be traced to Europe. This area of low pressure advanced from Newfoundland to the British Isles from the 9th to the 13th, was central north of the British Isles on the 14th and 15th, reached the Norwegian coast on the 16th, and thence apparently drifted slowly over northern Europe. From the 14th to the 18th the barometric pressure was low over northern and northwestern Europe, and was higher over southern Europe. During this period exceptionally high temperatures were reported in Belgium, central, western, and northern France, and southern Germany, and the weather was cooler than usual over the British Isles, Holland, Norway, and eastern Germany. In southern Europe and Algeria the average temperature obtained.

The history of notable warm waves warrants the conclusion that excesses of temperature in one part of a continent are compensated by deficiencies in other portions.

The following tables show the daily maximum temperature, the daily mean temperature, and the departure of the daily mean from the daily normal temperature at selected stations of the Weather Bureau in districts traversed by the warm waves of July 18 to August 11, 1892:

Daily maximum and daily mean temperature, and departure from daily normal temperature, July 17 to 31, 1892.

		17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.
Havre, Mont	Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mean	76	83	83	85	88	85	82	82	83	68	66	76	85	79	87
	Departure	-2	-2	+1	+1	+2	+1	-1	-3	-2	-12	-16	-16	-8	-5	-1
Bismarck, N. Dak	Maximum	81	84	88	84	83	90	86	86	86	82	66	72	77	84	77
	Mean	72	72	72	73	73	77	72	70	70	72	62	55	62	71	65
	Departure	+2	+2	+1	+2	+2	+6	0	-2	-2	0	-11	-15	-11	-3	-9
Omaha, Nebr	Maximum	80	90	95	97	98	100	98	98	97	96	97	65	74	80	88
	Mean	70	80	86	86	83	83	86	86	86	85	86	60	64	70	74
	Departure	-9	+1	+7	+8	+5	+4	+12	+9	+9	+9	+10	-16	-12	-5	-1
Abilene, Tex	Maximum	98	97	97	96	97	96	96	96	97	93	94	93	79	84	90
	Mean	86	86	86	86	86	84	86	85	86	84	84	86	72	77	81
	Departure	+4	+2	+2	+2	+2	0	+2	+2	+3	+1	+1	+3	-11	-6	-2
Duluth, Minn	Maximum	82	64	87	83	93	76	84	83	89	80	86	72	80	80	80
	Mean	69	62	72	72	80	72	73	72	77	70	74	66	68	70	72
	Departure	0	-7	+4	+4	+12	+5	+6	+5	+10	+2	+8	0	+3	+5	+7
Saint Louis, Mo	Maximum	82	86	92	93	86	92	95	96	95	93	92	90	78	80	85
	Mean	74	76	84	82	78	85	87	87	87	86	84	82	73	72	77
	Departure	-7	-5	+3	+2	-2	+5	+7	+8	+8	+7	+5	+3	-5	-6	-1
Montgomery, Ala.	Maximum	88	91	90	87	92	94	92	95	90	89	90	91	92	94	95
	Mean	81	82	82	80	82	83	84	84	80	80	80	82	82	84	84
	Departure	-3	-1	-1	-3	0	+1	+2	+2	-2	-2	-2	+1	+1	+3	+3
Alpena, Mich	Maximum	78	83	83	82	88	82	78	90	79	87	75	79	72	70	74
	Mean	63	70	71	68	72	73	68	80	71	74	70	72	64	59	62
	Departure	-4	+3	+4	+2	+6	+7	+2	+15	+6	+9	+5	+7	0	-5	-2
Cincinnati, Ohio	Maximum	77	82	86	92	86	91	94	98	97	94	93	94	90	78	85
	Mean	68	70	78	80	78	82	84	86	86	84	84	84	82	75	77
	Departure	-11	-9	-1	+2	0	+4	+6	+9	+9	+7	+7	+7	+6	-1	+1
Boston, Mass	Maximum	76	81	83	83	75	88	86	90	94	96	93	83	79	79	70
	Mean	65	70	73	76	66	76	78	80	84	85	82	76	72	74	65
	Departure	-7	-2	+1	+4	-5	+5	+7	+9	+13	+14	+11	+6	+2	+4	-5
Philadelphia, Pa	Maximum	77	81	77	88	85	88	90	91	93	101	96	96	98	87	80
	Mean	68	70	70	77	74	76	79	82	84	88	87	86	80	75	70
	Departure	-10	-8	-6	+2	-1	0	+3	+6	+8	+11	+10	+10	+14	+5	0
Washington, D. C	Maximum	75	81	78	88	84	89	89	93	97	99	98	93	94	92	88
	Mean	67	68	72	77	76	78	78	82	87	88	88	82	84	83	80
	Departure	-14	-12	-8	-2	-3	0	0	+4	+10	+12	+12	+6	+8	+7	+5
Lynchburg, Va	Maximum	76	77	87	91	87	91	95	96	98	100	100	97	97	88	93
	Mean	69	70	76	80	77	80	82	86	87	88	88	82	84	81	83
	Departure	-9	-8	-2	+2	-1	+2	+5	+5	+9	+10	+11	+6	+8	+5	+5
Mount Washington, N. H.	Maximum	40	47	52	44	48	56	55	64	65	56	56	56	63	59	49
	Mean	34	42	45	40	42	50	50	56	57	54	52	53	59	52	47
	Departure	-14	-4	+2	-6	-3	+5	+4	+11	+12	+5	+4	+5	+11	+5	-1

Daily maximum and daily mean temperature, and departure from daily normal temperature, August 1 to 13, 1892.

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
Havre, Mont	Maximum	86	88	97	94	91	91	72	75	79	91	94	80	88
	Mean	74	66	78	81	70	71	63	60	64	68	72	68	67
	Departure	+3	-5	+6	+9	-2	0	-8	-10	-6	-1	+3	0	0
Bismarck, N. Dak	Maximum	86	86	89	98	84	91	81	76	78	79	92	97	91
	Mean	68	74	72	80	72	72	72	66	65	67	74	88	76
	Departure	-6	+1	-1	+8	0	+4	+1	-3	-6	-3	+4	+17	+7
Omaha, Nebr	Maximum	83	90	88	88	94	89	91	100	84	82	87	88	75
	Mean	72	78	79	78	83	80	82	86	76	72	77	79	70
	Departure	-3	+3	+4	+3	+9	+6	+6	+16	+2	-2	+3	+5	-3

Daily maximum and daily mean temperature, &c.—Continued.

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
		0	0	0	0	0	0	0	0	0	0	0	0	0
Abilene, Tex	Maximum	93	90	89	93	94	95	93	91	85	90	92	94	96
	Mean	80	78	78	80	82	82	82	82	78	80	83	83	85
	Departure	-3	-5	-5	-3	0	0	0	0	-4	-2	+1	+1	+4
Duluth, Minn	Maximum	68	80	81	74	85	74	86	76	73	76	68	68	77
	Mean	62	70	70	67	73	69	72	69	66	66	63	64	68
	Departure	-3	+5	+5	+2	+8	+4	+7	+4	+2	+2	-1	0	+4
Saint Louis, Mo	Maximum	86	87	95	88	96	92	96	97	91	83	85	85	82
	Mean	78	76	84	81	84	83	82	86	82	78	78	77	76
	Departure	0	-2	+6	+3	+6	+5	+4	+8	+5	+1	+1	0	-1
Montgomery, Ala	Maximum	93	88	89	92	94	92	89	86	85	90	92	88	88
	Mean	83	80	80	81	81	82	80	78	78	79	82	80	80
	Departure	+2	-1	-1	0	0	+1	-1	-3	-2	-1	+3	0	0
Alpena, Mich	Maximum	71	73	80	71	71	76	85	79	82	76	72	74	77
	Mean	66	62	70	60	62	64	70	74	74	70	66	65	67
	Departure	+2	-2	+6	-4	-2	0	+6	+10	+11	+7	+3	+2	+4
Cincinnati, Ohio	Maximum	80	85	88	84	85	86	89	93	92	88	83	79	79
	Mean	75	74	74	79	73	76	78	82	82	80	76	72	70
	Departure	-1	-2	-2	+3	-3	0	+2	+6	+7	+5	+1	-3	-5
Boston, Mass	Maximum	66	65	71	87	70	83	80	85	89	94	94	77	69
	Mean	64	62	66	76	73	74	71	74	80	85	84	72	66
	Departure	-6	-8	-4	+6	+3	+4	+1	+4	+11	+16	+15	+3	-3
Philadelphia, Pa	Maximum	76	73	85	87	85	87	85	88	92	90	92	82	78
	Mean	71	70	75	78	78	76	78	78	83	84	84	78	71
	Departure	-5	-5	0	+2	+2	0	+4	+3	+9	+9	+10	+3	-4
Washington, D. C	Maximum	85	84	85	87	83	86	85	89	95	95	92	82	80
	Mean	78	78	76	78	74	74	76	78	84	84	82	78	72
	Departure	+3	+3	+1	+3	-1	-1	+1	+3	+10	+10	+8	+4	-2
Lynchburg, Va	Maximum	88	86	88	91	89	90	91	93	95	94	93	87	84
	Mean	80	78	78	78	78	77	78	80	82	82	82	80	72
	Departure	+4	+2	+2	+2	+2	+1	+2	+4	+7	+7	+7	+5	-3
Mount Washington, N. H	Maximum	59	56	54	56	51	51	46	56	58	62	59	54	53
	Mean	50	52	51	50	48	45	40	48	50	56	56	52	48
	Departure	+2	+3	+4	+2	0	-3	-9	0	+6	+8	+7	+1	-1

METEOROLOGICAL TABLES.

Meteorological record of Army post surgeons, voluntary, and other co-operating observers, August, 1892.

Stations.	Max.	Min.	Mean.	Precip'n.
Alabama.	0	0	0	Ins.
Bermuda*†	93	68	79.0	2.43
Bessemer	93	68	79.4	5.13
Brewton†	100	65	81.4	13.55
Carrollton*†	90	70	78.2	2.19
Chepultepec†	84	68	77.5	6.50
Citronelle†	89	70	79.2	7.87
Claiborne Landing†				1.80
Cordova†				7.26
Daphne†	96	67	80.9	11.77
Decatur†				6.39
Decatur b†	92	56	74.5	5.66
Eufaula a†	93	69	79.6	10.09
Evergreen†	91	62	79.0	9.13
Fayette†	91	64	78.4	6.93
Florence a†				6.24
Florence b†	91	61	76.3	3.92
Fort Deposit†	92	67	79.9	3.08
Gadsden†				8.91
Geneva†	96	70	81.6	8.03
Greensboro†	91	69	77.2	5.53
Healing Springs†	95	63	79.5	5.41
Highland Home†	89	63	77.7	6.04
Jasper†	98	61	76.9	8.20
Livingston a†	90	69	76.8	4.74
Livingston b†	93	68	79.4	4.95
Lock No. 4†				4.71
Lynn†				6.09
Marion†	93	68	79.3	4.14
Maysville†	88	63	77.3	6.89
Mount Willing†	89	70	80.3	7.98
Newburg†	90	61	76.7	9.40
Newton†	92	62	80.1	7.35
Opelika†	94	70	80.0	4.94
Oxanna†	88	62	75.5	4.47
Pine Apple†	94	63	79.8	5.99
Pittsboro†	92	73	81.5	4.45
Pushmataha†	90	69	77.7	4.09
Selma†				5.51
Sturdevant†				8.10
Talladega†				6.15
Tallassee Falls†				5.40
Thomasville†	94	68	79.8	7.95
Tuscaloosa†	92	56	79.3	6.53
Tuscumbia a†	91	67	76.1	3.52

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Max.	Min.	Mean.	Precip'n.
Arizona—Cont'd.	0	0	0	Ins.
San Carlos	112	58	83.2	1.90
San Simon*†	108	75	86.9	0.03
Show Low				0.84
Signal†	116	63	89.6	0.52
Teviston				T.
Texas Hill*†	118	75	95.1	0.00
Tucson a†	110	68	87.4	1.84
Tucson b†	107	70	84.7	1.23
Walnut Grove†				0.07
Walnut Ranch*†	95	62	74.4	3.40
Whipple Barracks	101	48	73.4	2.04
Wilcox†				1.18
Wilcox*†	100	59	80.4	0.94
Winslow*†	106	58	80.7	
Yuma*†	112	74	93.1	0.03
Arkansas.				
Arkadelphia†				6.50
Arkansas City†				2.68
Bee Branch†	99	52	77.5	3.90
Black Rock*†	96	60	80.3	3.31
Brinkley†	94	57	77.5	4.80
Camden a†				4.54
Camden b†	94	66	77.7	5.03
Conway*†	92	56	76.4	4.63
Dallas†	95	57	75.5	6.54
Dardanelle†				4.91
Eldorado†	94	60	75.5	3.68
Fayetteville†	97	47	74.3	5.39
Forrest†	94	59	79.5	5.27
Fulton†				3.75
Gaines Landing†				2.72
Harrison†	96	48	76.0	0.78
Helena†				6.07
Helena b†	98	60	79.1	5.97
Hope†	100	63	78.3	3.69
Hot Springs	98	53	76.0	5.96
Keeseee Ferry*†	106	53	77.7	2.88
Kirby†	94	54	77.6	6.39
Lonoke†	100	60	80.6	4.75
Madding†				79.0
Malvern†	96	66	80.2	2.61
Mount Nebo†	90	58	77.0	5.01
New Gascony*†	96	66	79.4	3.34
Newport a†				5.09
Newport b†	99	58	79.2	5.90
Arkansas—Cont'd.	0	0	0	Ins.
Osceola†	93	57	77.2	2.53
Pine Bluff†	98	64	80.6	4.23
Prescott†	93	62	79.0	5.48
Rogers†				1.81
Russellville†	97	59	79.6	3.59
Stuttgart†	96	56	78.6	6.15
Texarkana†	97	62	80.6	5.12
Washington a†	92	68	77.3	
Washington b†	97	68	77.4	5.17
Winslow*†	86	61	74.6	4.29
California.				
Agnew†	100	46	66.0	0.00
Alcalde†	114	60	86.5	0.00
Almaden†	99	55	68.1	0.00
Alvarado†	97	45	66.9	0.00
Anaheim†	98	64	74.7	0.00
Antioch†	104	59	74.8	0.00
Aptos†	81	50	63.4	0.00
Arcata				0.00
Arlington Heights	103	51	75.4	0.00
Athlone†	116	64	84.7	0.00
Auburn†	105	58	76.6	0.00
Bakersfield a†	110	69	86.6	0.00
Bakersfield b†	110	49	78.0	0.00
Beaumont†	107	54	77.7	0.00
Belmont†	98	52	70.5	0.00
Berendo†	111	67	85.8	0.00
Berkeley†	90	51	69.9	0.00
Bishop Creek†	103	65	81.9	0.00
Boca†	92	32	61.1	0.00
Borden†	113	58	82.0	0.00
Boulder Creek†	110	48	64.9	0.00
Brentwood†	104	58	77.7	0.00
Brighton†	111	59	78.1	0.00
Byron†	108	53	76.3	0.00
Caliente†	105	60	80.8	0.00
Calistoga†	103	53	70.1	0.00
Capitola†	82	54	65.2	0.00
Castroville†	78	53	63.2	0.00
Centerville†	106	60	68.8	0.00
Chico†	110	58	76.7	0.00
Cisco†	83	40	61.7	0.00
Claremont†	100	48	72.4	0.00
Colfax†	105	48	75.3	0.00
Colton†	106	52	73.7	0.00

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
California—Cont'd.				Ins.	California—Cont'd.				Ins.
Cornwall ¹	107	58	81.7	0.00	Palermo ¹	101	50	73.6	0.00
Crescent City.....	107	58	81.7	0.00	Palm Springs ¹	120	54	92.0	0.00
Crofton ¹	102	56	76.0	0.00	Pasadena ¹	98	50	66.7	0.00
Davisville ¹	106	50	76.9	0.00	Paso Robles ¹	107	50	72.4	0.00
Davisville ²	105	52	74.8	0.00	Petaluma ¹	100	52	66.2	0.00
Delano ¹	107	60	83.2	0.00	Placerville ¹	102	53	75.7	0.00
Delta ¹	108	61	79.8	0.00	Placerville ²	98	46	69.4	0.00
Downey ¹	96	60	74.9	0.00	Pleasanton ¹	107	53	70.1	0.00
Drytown.....	105	48	74.6	0.00	Pleasanton ²	105	41	67.2	0.00
Duarte ¹	102	53	70.3	0.00	Point Bonita L. H.....	.....	.....	.....	0.13
Dunnigan ¹	104	55	81.3	0.00	Point Pinos L. H.....	.....	.....	.....	0.14
Dunsmuir ¹	102	52	69.0	0.00	Pomona ¹	101	50	72.5	0.00
Edgewood ¹	92	50	68.6	0.00	Porterville ¹	108	70	85.7	0.00
El Casco ¹	116	55	80.2	0.00	Puente ¹	98	59	74.2	0.00
Eldorado ¹	107	58	77.7	0.00	Ravenna ¹	109	56	77.2	0.00
Elmira ¹	102	55	73.6	0.00	Red Bluff ¹	113	73	88.9	0.00
El Verano ¹	102	55	69.7	0.00	Redding ¹	112	59	83.1	0.00
Emigrant Gap ¹	86	60	69.7	0.00	Redding ²	101	57	79.3	0.00
Esparto ¹	105	55	76.0	0.00	Redlands ¹	101	70	81.4	0.00
Evergreen.....	.....	.....	.....	0.00	Rocklin ¹	108	55	75.9	0.00
Exeter ¹	107	63	84.5	0.00	Rumsey ¹	108	66	83.8	0.00
Farlington ¹	112	58	78.7	0.00	Sacramento ¹	96	47	65.9	0.00
Felton ¹	105	48	68.0	0.00	Sacramento ²	97	56	71.7	0.00
Fernando ¹	105	52	75.4	0.00	Sacramento ³	91	60	72.7	0.00
Florence ¹	90	63	72.0	0.00	Salinas ¹	80	52	62.6	0.00
Florin ¹	107	52	71.5	0.00	Salinas ²	121	74	96.5	0.00
Folsom City ¹	110	62	81.5	0.00	Salinas ³	114	62	85.0	0.00
Folsom City ².....	.....	.....	.....	0.00	San Ardo ¹	110	52	70.6	0.00
Forestville ¹	103	45	67.4	0.00	San Ardo ²	112	45	71.4	0.00
Fort Bidwell.....	93	42	68.8	0.02	San Bernardino ¹	105	49	75.0	0.00
Fresno ¹	117	68	87.4	0.00	San Gabriel ¹	99	60	74.2	0.00
Fruto ¹	106	61	80.8	0.00	San Jose ¹	96	54	66.8	0.00
Galt ¹	107	63	84.6	0.00	San Jose ²	95	40	65.2	0.00
Georgetown ¹	98	49	75.0	0.00	San Mateo ¹	92	52	64.5	0.00
Gilroy ¹	108	46	69.1	0.00	San Miguel ¹	112	50	73.8	0.00
Girard ¹	98	64	74.8	0.00	San Pedro ¹	92	62	73.5	0.00
Glen Ellen ¹	104	48	68.6	0.00	Santa Ana ¹	95	62	73.0	0.00
Goshen.....	108	64	81.7	0.00	Santa Barbara ¹	88	50	66.3	0.00
Grass Valley ¹.....	.....	.....	.....	0.00	Santa Barbara ²	90	52	66.6	0.00
Haywards ¹	92	55	64.2	0.00	Santa Clara ¹	94	49	64.2	0.00
Hollister ¹	109	48	65.8	0.00	Santa Cruz ¹	87	50	62.8	0.00
Hornbrook ¹	100	56	74.6	0.00	Santa Cruz ²	88	41	61.6	0.00
Humboldt L. H.....	.....	.....	.....	0.16	Santa Margarita ¹	100	55	69.2	0.00
Huron ¹	113	63	83.6	0.00	Santa Maria ¹	90	48	64.1	0.00
Independence ¹	102	54	72.6	0.00	Santa Monica ¹	90	60	68.7	0.00
Independence ²	110	66	87.4	0.00	Santa Paula ¹	88	54	68.4	0.00
Indio ¹	112	71	90.5	0.00	Santa Rosa ¹	95	49	65.3	0.00
Ione ¹	105	56	76.1	0.00	Selma ¹	110	68	82.5	0.00
Iowa Hill ¹	101	58	77.2	0.00	Shasta ¹	96	40	66.8	0.00
Julian ¹	99	49	73.6	0.11	Shingle Springs ¹	93	61	72.9	0.00
Keeler ¹	101	69	84.2	0.00	Sims ¹	104	50	72.6	0.00
Kennedy ¹	101	60	72.5	0.00	Sisson ¹	93	45	66.9	0.00
Kennedy Gold Mine ¹.....	.....	.....	.....	0.00	Soledad ¹	93	52	65.4	0.00
King City ¹	104	56	74.9	0.00	South Valley ¹	92	52	63.7	0.00
King City ²	104	48	70.5	0.00	Spadra ¹	100	55	74.6	0.00
Kingsburg ¹	110	60	80.2	0.00	Stockton ¹	104	52	72.4	0.00
Knights Landing ¹	110	56	76.1	0.00	Stockton ²	105	57	78.4	0.00
Lagrange ¹	116	56	81.9	0.00	Summit ¹	88	45	63.5	0.00
Lathrop ¹	104	55	76.5	0.00	Suisun City ¹	105	55	70.1	0.00
Laurel ¹	103	50	69.8	0.00	Susannah ¹	91	52	70.6	0.00
Lemoore ¹	112	61	81.0	0.00	Tehachapi ¹	99	66	80.5	0.00
Livermore ¹	99	50	69.9	0.00	Templeton ¹	108	50	70.5	0.00
Livingston ¹	100	63	81.9	0.00	Towles ¹	92	57	73.1	0.00
Lodi ¹	106	49	73.4	0.00	Tracy ¹	105	60	80.9	0.00
Long Beach ¹	89	71	71.2	0.00	Traver ¹	112	58	80.7	0.00
Los Angeles ¹	99	58	73.4	0.00	Trinidad L. H.....	.....	.....	.....	0.35
Los Banos ¹	105	60	76.2	0.00	Truckee ¹	94	58	71.9	0.00
Los Gatos ¹	101	54	67.8	0.00	Tulare ¹	94	62	66.0	0.00
Los Gatos ²	104	43	68.8	0.00	Turlock ¹	107	62	83.3	0.00
Mammoth Tank ¹	115	71	90.2	0.10	Turlock ²	106	60	82.2	0.00
Martinez ¹	94	50	66.3	0.00	Turlock ³	108	58	78.0	0.00
Marysville ¹	103	63	79.8	0.00	Upper Lake ¹	103	48	73.4	0.00
Menlo Park ¹	102	50	68.0	0.00	Upper Lake ²	106	48	67.0	0.00
Merced ¹	109	54	75.5	0.00	Vacaville ¹	110	57	75.2	0.00
Milton (near) ¹	108	53	75.6	0.00	Vacaville ²	115	58	79.1	0.00
Modesto ¹	107	65	79.9	0.00	Valley Springs ¹	103	60	79.0	0.00
Mohave ¹	115	66	88.1	0.00	Ventura ¹	73	59	66.1	0.00
Monson ¹	110	66	85.2	0.00	Vina ¹	108	60	76.5	0.00
Montague ¹	95	58	73.5	0.00	Volcano Springs ¹	124	80	99.2	0.00
Monterey ¹	86	50	62.4	0.00	Walla Walla Ck ¹	94	48	69.6	0.00
Monterey (Hotel del Monte) ¹	81	52	61.6	0.00	Westley ¹	107	50	70.1	0.00
Napa City ¹	100	50	67.8	0.00	Whittier ¹	107	65	81.1	0.00
Napa City ²	98	50	65.6	0.00	Williams ¹	100	69	78.6	0.00
National City ¹	90	55	68.0	0.02	Williams ²	108	58	81.1	0.00
Needles ¹	117	66	93.8	0.00	Willows ¹	106	48	78.8	0.00
Needles ²	109	62	91.2	0.00	Winchester ¹	105	60	80.9	0.00
Nevada City ¹	92	54	68.6	0.00	Winters ¹	110	46	77.4	0.00
Newark ¹	96	56	66.5	0.00	Woodland ¹	108	60	81.9	0.00
Newcastle ¹	105	50	77.2	0.00	Yreka ¹	100	56	73.9	0.00
Newhall ¹	114	54	77.0	0.00	Yuba City ¹	100	62	79.2	0.00
Newman ¹	111	60	80.0	0.00	Colorado.....	.....	.....	.....	1.05
Niles ¹	101	58	67.8	0.00	Abbott ¹.....	.....	.....	.....	0.78
Norwalk ¹	110	58	70.2	0.00	Alma ¹	78	23	50.4	0.07
Oakdale ¹	97	58	71.4	0.00	Arboles ¹.....	.....	.....	.....	5.29
Oakland ¹	108	56	76.6	0.00	Avoca ¹.....	.....	.....	.....	1.15
Oakland ²	88	51	64.1	0.00	Box Elder ¹.....	.....	.....	.....	0.40
Ogden ¹	80	54	62.4	0.00	Breckenridge ¹	88	21	54.7	1.02
Oleta ¹	120	90	101.3	0.00	Brush ¹.....	.....	.....	.....	1.11
Ontario ¹	102	52	74.8	0.00	Carson ¹	80	42	51.4	4.40
Orangevale ¹	105	60	77.4	0.00	Castle Rock ¹	94	38	65.8	2.47
Orland ¹	107	50	75.9	0.00	Cheney Wells ¹	104	51	68.6	.....
Orville ¹	111	62	83.1	0.00	Chivington ¹.....	.....	.....	.....	.....
Pajaro ¹	106	50	79.8	0.00	.....	.....	.....	.....	.....
Pajaro ²	82	55	63.4	0.00	.....	.....	.....	.....	.....

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Colorado—Cont'd.</i>					<i>Florida—Cont'd.</i>				
Climax *† 10.....	70	32	47.2	0.90	Eustis † 1.....	97	70	79.1	9.00
Collbran.....	.....	.....	.....	0.58	Federal Point †.....	92	68	79.4	12.10
Colorado Springs *†.....	94	38	66.4	0.68	Fort Meade † 1.....	92	70	79.8	6.83
Como (near) †.....	79	26	54.1	1.05	Gainesville †.....	98	70	82.9	12.96
Cope †.....	99	50	75.5	3.13	Gramere.....	92	69	80.4	.....
Cumbres †.....	74	31	52.0	2.18	Green Cove Sp'gs †.....	95	70	81.4	9.09
Del Norte †.....	88	35	61.4	0.22	Homeland †.....	94	68	77.2	8.97
Delta †.....	104	36	71.4	0.15	Hypoluxo *† 1.....	97	72	84.1	4.17
Dillon †.....	.....	.....	.....	1.97	Kissimmee City †.....	.....	70	.....	5.61
Downing †.....	100	32	67.1	0.90	Manatee † 1.....	93	69	79.6	9.72
Dumont.....	.....	.....	.....	1.67	Merritts Island †.....	90	72	77.9	2.37
East Dale.....	.....	.....	.....	0.60	Mullet Key † 1.....	100	72	83.2	6.09
Fort Collins †.....	99	34	67.3	0.22	Myers †.....	90	72	79.2	6.62
Fort Collins (near).....	.....	.....	.....	0.05	Ocala *† 1.....	93	72	79.2	10.02
Garnett.....	.....	.....	.....	0.11	Orange City †.....	95	69	80.9	6.17
Gaynor.....	.....	.....	.....	0.19	Orlando †.....	99	71	83.8	9.05
Georgetown †.....	83	34	62.7	1.45	Oxford *† 1.....	93	72	78.9	13.74
Glen Eyrie †.....	90	38	66.4	0.50	Plant City.....	96	67	80.3	.....
Gold Hill.....	.....	.....	.....	0.65	St. Francis B'ks.....	90	70	79.4	7.36
Grand Junction †.....	99	47	77.3	0.10	St. Petersburg † 1.....	93	72	80.8	10.87
Grover †.....	97	47	68.8	0.62	Tallahassee †.....	89	69	76.4	6.43
Husted †.....	99	35	66.2	1.03	Tarpon Springs †.....	92	69	80.1	13.56
Jefferson *† 1.....	81	33	48.8	3.88	<i>Georgia.</i>				
Julesburg †.....	103	39	72.0	1.43	Adairsville †.....	98	59	77.5	5.43
La Jara †.....	92	36	64.4	0.38	Albany †.....	90	70	81.4	9.18
Lamar †.....	108	45	76.8	2.09	Alapaha †.....	94	68	79.6	10.20
La Porte.....	.....	.....	.....	0.32	Americus †.....	98	68	81.0	9.00
Las Animas †.....	100	43	73.2	0.12	Athens a †.....	93	65	77.8	3.42
Lavender.....	.....	.....	.....	0.81	Athens b †.....	94	65	78.4	3.32
Lay *† 1.....	96	41	65.6	0.42	Bainbridge †.....	96	68	80.8	8.45
Leslie.....	.....	.....	.....	1.28	Blakely †.....	95	70	80.0	8.19
Livermore.....	90	35	66.0	0.36	Cmak †.....	96	61	79.6	3.87
Longmont †.....	98	38	66.9	0.22	Canton †.....	.....	.....	.....	8.25
Loveland.....	.....	.....	.....	0.09	Columbus †.....	92	71	79.6	4.54
Meeker †.....	93	39	64.7	0.44	Cordele †.....	100	68	81.7	8.39
Middle Box Elder.....	.....	.....	.....	0.20	Dahlonega †.....	89	60	75.0	5.51
Minneapolis †.....	.....	.....	.....	1.85	Darien †.....	99	70	82.8	5.00
Monte Vista a.....	86	32	60.6	0.30	Diamond †.....	91	56	73.6	3.45
Moraine †.....	85	29	59.7	0.62	Dublin †.....	95	64	80.4	5.43
Pagoda (near) †.....	95	25	62.9	0.35	Eastman †.....	98	70	82.8	6.17
Paonia †.....	.....	.....	.....	0.52	Elberton †.....	.....	.....	.....	3.59
Parachute †.....	97	39	70.5	0.30	Fleming †.....	96	70	83.7	12.31
Red Cliff.....	.....	.....	.....	0.31	Folkston †.....	96	73	82.8	4.68
Rico.....	.....	.....	.....	0.00	Forysth †.....	92	68	79.7	7.72
Robb †.....	101	44	72.9	2.40	Fort Gaines †.....	92	60	79.2	7.12
Rocky Ford †.....	104	43	74.0	3.10	Gainesville †.....	90	62	76.6	4.61
Saint Cloud.....	.....	.....	.....	0.00	Gillsville *† 1.....	91	67	76.6	5.10
Sanborn.....	.....	.....	.....	3.20	Giffin †.....	96	64	78.8	3.99
Sun Luis †.....	89	29	61.1	0.55	Hawkinsville †.....	93	60	75.1	8.21
Sedgewick.....	.....	.....	.....	1.80	Hephzibah *† 1.....	90	72	78.2	2.23
Seibert.....	.....	.....	.....	3.47	Homerville †.....	95	69	80.2	6.70
Sheridan Lake †.....	.....	.....	.....	2.71	Lafayette †.....	94	58	77.0	6.81
Smoky Hill Mine †.....	94	34	63.6	1.10	Lagrange † 1.....	93	64	76.7	4.17
Stamford.....	.....	.....	.....	2.40	Lincolnton †.....	90	.....	.....	1.73
Steamboat Spring †.....	98	22	61.4	0.00	Louisville †.....	99	66	80.8	4.37
Surface Creek †.....	92	35	68.8	0.52	Lumpkin †.....	93	69	79.5	7.94
Table Rock.....	90	38	63.3	0.59	McArthur †.....	94	60	79.6	8.92
T. S. Ranch †.....	99	59	71.9	8.63	Macon †.....	92	62	79.9	3.20
Thon †.....	104	39	71.4	0.58	Marietta †.....	89	62	74.5	7.68
Twin Lakes.....	.....	.....	.....	0.14	Marshallsville †.....	93	62	80.6	7.22
Vilas.....	.....	.....	.....	2.73	Milledgeville †.....	91	70	78.8	5.55
Villa Grove †.....	.....	.....	.....	1.04	Millen †.....	99	65	80.8	6.00
Waller †.....	.....	.....	.....	4.57	Morgan †.....	93	73	80.9	5.16
Ward District.....	.....	.....	.....	1.65	Newnan †.....	97	63	77.7	6.36
Watervale.....	.....	.....	.....	1.90	Piscola.....	.....	.....	.....	9.10
Wilde.....	.....	.....	.....	0.67	Point Peter *† 1.....	96	62	78.3	2.40
Yuma.....	.....	.....	.....	1.50	Poulan †.....	95	68	77.6	12.33
Zuck.....	.....	.....	.....	2.45	Quitman b †.....	98	68	80.7	9.75
<i>Connecticut.</i>					Resaca †.....				
Canton.....	93	52	70.1	8.13	Rome †.....	95	63	77.4	6.68
Colchester.....	90	49	69.6	3.91	Thomasville †.....	95	69	80.2	13.89
Falls Village.....	.....	.....	.....	6.13	Toccoa †.....	94	66	77.2	5.87
Hartford b.....	.....	.....	.....	5.51	Union Point †.....	92	66	77.8	2.50
Lake Konomoc.....	.....	.....	.....	3.22	Washington †.....	94	70	79.8	4.67
Lebanon.....	.....	.....	.....	3.53	Way Cross †.....	94	70	79.9	9.98
Middletown.....	94	53	73.0	3.90	Waynesboro †.....	96	67	80.8	5.39
New Hartford a *† 1.....	90	52	64.8	6.96	West Point †.....	94	67	81.4	4.61
New Hartford b.....	.....	.....	.....	5.50	<i>Maine.</i>				
N. Grosvenor Dale †.....	92	52	67.4	5.00	American Falls †.....	97	32	67.4	0.36
North Woodstock.....	.....	.....	.....	2.80	Beaver †.....	.....	.....	.....	0.11
Norwalk b.....	88	52	69.7	5.50	Boise Barracks.....	102	32	69.4	0.00
South Manchester.....	.....	.....	.....	5.15	Fort Sherman.....	94	42	66.4	1.51
Stevenson.....	.....	.....	.....	3.43	Garden Valley †.....	93	38	66.4	0.80
Storrs †.....	88	50	67.4	2.20	Henry's Lake †.....	88	23	56.4	T.
Thompson *† 1.....	86	53	67.2	.....	Kootenai † 1.....	86	39	64.3	1.12
Voluntown †.....	91	51	68.7	3.26	Payette †.....	102	39	68.9	T.
Wallingford †.....	.....	.....	.....	3.74	Rutburg *† 1.....	96	52	69.5	0.00
Waterbury.....	88	53	70.1	5.30	<i>Illinois.</i>				
West Simsbury.....	.....	.....	.....	5.38	Atwood *.....	94	44	.....	1.24
<i>Delaware.</i>					Aurora a †.....	92	50	70.0	2.74
Dover † 1.....	92	60	75.0	2.54	Bloomington †.....	.....	.....	.....	1.16
Kirkwood *† 2.....	100	.....	79.7	.....	Carlinville †.....	99	49	75.7	1.91
Seaford †.....	97	59	76.0	1.39	Charleston †.....	90	51	73.5	2.72
<i>District of Columbia.</i>					Collinsville †.....	93	52	75.2	2.96
Dist'ng Reserv'r *† 1.....	92	62	77.2	1.40	Decatur *† 1.....	90	51	73.6	1.84
Long Bridge †.....	.....	.....	.....	2.11	Dixon † 1.....	96	45	71.8	1.94
Rec'ng Reserv'r *† 1.....	90	64	76.4	1.19	East Peoria †.....	96	45	72.0	1.54
West Washington †.....	97	62	78.2	0.80	Ellsworth †.....	95	52	75.3	4.30
<i>Florida.</i>					Fairmont †.....	96	54	75.6	3.10
Amelia †.....	91	70	80.0	6.75	Fort Sheridan.....	93	49	69.1	0.86
Archer †.....	96	68	80.3	11.15	Golconda †.....	91	56	75.7	3.94
Avon Park *† 1.....	91	70	77.2	6.40	Greenville †.....	100	48	75.1	2.64
Bristol †.....	100	70	78.4	12.34	Griggsville †.....	93	50	74.2	0.85
Brooksville †.....	90	69	79.2	13.59	Hennepin †.....	95	45	72.8	0.32
Clermont † 1.....	94	78	84.1	10.67	Jordans Grove †.....	94	50	75.8	2.22

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Illinois—Cont'd.</i>	°	°	°	Ins.	<i>Iowa—Cont'd.</i>	°	°	°	Ins.
Kankakee f.....	86	50	70.6	2.24	Hampton f.....	89	43	66.8	1.07
Louisville f.....	94	50	73.4	5.85	Hawkeye f.....	93	46	70.7	0.91
Manchester f.....	92	46	71.0	3.27	Hopeville f.....	90	46	70.7	2.49
Martinsville f.....	97	54	75.2	1.10	Hopkinton f.....	93	42	70.5	2.77
Mascoutah f.....	94	52	74.3	1.15	Independence f.....	94	46	69.3	1.92
Mattoon f.....	99	47	76.0	3.97	Indianola f.....	94	44	72.5	2.50
McLeansboro f.....	99	47	76.0	3.97	Iowa City f.....	91	43	68.1	1.05
Mount Carmel f.....	99	47	76.0	3.97	Keosauqua f.....	97	50	74.4	2.32
Muddy Valley f.....	99	47	76.0	3.97	Larrabee f.....	97	42	69.8	4.69
New Haven f.....	95	49	76.4	3.26	Logan f.....	97	47	73.6	3.37
Olney a f.....	97	49	72.5	3.57	Maquoketa f.....	94	51	70.4	2.27
Olney b f.....	94	48	69.0	1.71	Marshalltown f.....	90	48	70.8	1.52
Ottawa f.....	96	46	72.0	0.81	Mason City f.....	91	53	73.2	2.45
Palestine f.....	94	48	72.7	3.02	Maxon f.....	95	52	73.1	0.65
Pana f.....	97	59	76.9	6.07	Mechanicsville f.....	91	43	70.6	2.93
Peoria f.....	97	52	75.9	0.73	Monticello f.....	91	45	70.2	2.44
Philo f.....	93	41	72.2	4.29	Mount Ayr f.....	93	52	73.9	1.05
Rantoul f.....	94	49	75.2	1.56	Mount Pleasant a f.....	91	46	71.6	1.09
Riley f.....	91	49	69.4	4.42	Murray f.....	92	46	71.6	1.09
Rockford f.....	90	48	70.3	7.26	Osage f.....	94	45	65.6	2.69
Rushville f.....	98	49	77.2	0.60	Oskaloosa f.....	94	44	71.8	1.41
Shawneetown f.....	89	50	69.1	3.56	Panama f.....	97	45	70.8	2.48
Sycamore f.....	95	49	72.0	2.42	Richland f.....	92	52	72.0	2.02
Walnut f.....	91	59	73.0	0.87	Rock Rapids f.....	92	47	72.0	2.62
White Hall f.....	91	46	69.8	5.15	Seymour f.....	90	49	72.3	3.66
Winnebago f.....	91	46	69.8	5.15	Spirit Lake f.....	95	44	71.2	2.77
<i>Indiana.</i>	°	°	°	Ins.	Storm Lake f.....	91	46	69.7	1.77
Angola f.....	98	54	72.2	1.62	Vinton f.....	98	50	75.5	1.27
Ashboro f.....	92	46	71.3	1.91	Washington f.....	92	44	70.9	2.25
Butler f.....	92	46	71.3	5.27	Webster City f.....	92	44	70.9	2.25
Cambridge City f.....	90	47	71.9	2.24	Williams f.....	89	44	68.0	0.71
Columbia City f.....	94	50	75.4	1.82	Winterset f.....	96	46	72.2	2.91
Columbus f.....	94	54	73.3	2.66	<i>Kansas.</i>	°	°	°	Ins.
Connersville f.....	90	42	71.6	1.77	Abilene f.....	100	50	76.6	2.75
Degonia Springs f.....	91	50	75.6	3.60	Allison f.....	98	46	74.2	4.15
Delphi f.....	93	45	70.6	2.10	Altoona f.....	100	54	73.6	4.48
Evansville f.....	94	52	72.2	2.43	Antelope f.....	100	54	73.6	4.48
Farmland f.....	93	47	69.4	0.88	Arkansas f.....	104	48	75.8	2.19
Hammond f.....	90	55	71.2	0.87	Atchison f.....	99	49	76.1	3.22
Hawthorn f.....	93	47	69.4	0.88	Belleville f.....	99	49	76.1	3.22
Huntington f.....	93	47	69.4	0.88	Bucklin f.....	99	49	76.1	3.22
Irvington f.....	93	54	72.4	1.16	Burr Oak f.....	101	55	76.6	3.93
Jeffersonville f.....	93	53	75.6	1.99	Buffalo Park f.....	101	55	76.6	3.93
Lafayette f.....	93	45	72.5	3.57	Cawker City f.....	98	58	75.6	1.30
Logansport f.....	92	44	71.9	2.30	Coldwater f.....	103	50	77.4	2.32
Logansport b f.....	92	44	71.9	2.30	Collyer f.....	101	53	74.4	5.20
Mauzy f.....	91	44	71.3	2.15	Columbia f.....	100	48	77.4	2.88
Mount Vernon f.....	91	44	71.3	2.15	Cunningham f.....	107	46	75.6	3.56
New Albany f.....	90	62	73.3	3.12	Downs f.....	100	50	76.6	2.75
Point Isabel f.....	95	45	72.8	4.27	Elco f.....	99	52	75.9	4.20
Princeton f.....	94	55	75.4	2.68	Elk Falls f.....	100	68	82.2	2.55
Rushville f.....	95	47	72.6	3.41	Ellis f.....	112	50	77.2	0.99
Seymour f.....	94	47	72.6	3.41	Emporia f.....	99	53	75.2	4.78
Terre Haute f.....	94	47	72.6	3.41	Englewood f.....	105	57	77.8	1.76
Vevay f.....	92	51	75.2	3.05	Eureka Ranch f.....	102	44	75.6	2.93
Vincennes f.....	92	48	73.5	2.03	Fort Riley f.....	101	50	76.6	4.78
Wabash f.....	91	53	71.7	4.96	Gibson f.....	107	44	76.1	6.96
Worthington f.....	92	48	73.5	2.03	Gove City f.....	100	54	75.6	4.11
<i>Indian Territory.</i>	°	°	°	Ins.	Grainfield f.....	98	50	75.4	3.32
Eufaula f.....	104	49	77.6	4.53	Greensburg f.....	103	64	81.8	3.43
Fort Supply f.....	104	49	77.6	4.53	Grenola f.....	104	51	79.4	2.80
Healdton f.....	102	60	78.8	4.01	Grinnell f.....	102	60	79.4	2.80
Lehigh f.....	108	55	80.5	3.77	Havensville f.....	99	52	74.0	3.60
Pauls Valley f.....	108	62	86.8	2.74	Hays City f.....	103	36	70.0	5.68
Purcell f.....	104	53	81.2	4.00	Hesston f.....	103	36	70.0	5.68
Sapulpa f.....	102	66	87.0	5.38	Horton f.....	98	50	75.2	3.11
South McAlester f.....	98	61	80.8	9.03	Hutchinson f.....	102	50	77.2	1.51
Tulsa f.....	98	61	80.8	9.03	Independence f.....	105	53	80.0	4.22
<i>Iowa.</i>	°	°	°	Ins.	Kansas City f.....	102	49	75.7	2.05
Algona f.....	92	47	70.0	2.71	Kellogg f.....	107	51	80.1	4.05
Alta f.....	94	42	68.4	4.63	Kiowa f.....	105	59	81.6	2.31
Amana f.....	92	43	70.9	1.99	Kirwin f.....	105	59	81.6	2.31
Ames b f.....	93	40	71.8	2.99	La Crosse f.....	104	53	79.7	3.71
Ames c f.....	92	43	70.9	1.99	Lakin f.....	111	46	76.6	0.15
Atlantic f.....	102	43	69.6	2.38	Lawrence f.....	98	55	75.8	3.50
Bancroft f.....	91	43	68.8	2.85	Lebo f.....	100	47	75.6	3.50
Belle Plaine f.....	94	50	71.3	2.53	McAllister f.....	104	51	78.7	2.00
Blakeville f.....	95	52	73.5	2.80	Macksville f.....	101	41	76.2	3.14
Blockton f.....	98	45	70.9	2.04	McPherson f.....	101	41	76.2	3.14
Carroll f.....	95	47	73.5	1.55	Manhattan f.....	105	46	74.6	4.32
Cedar Falls f.....	90	48	71.5	2.21	Manhattan b f.....	106	52	73.8	3.97
Cedar Rapids f.....	95	48	75.4	2.09	Manhattan c f.....	106	52	73.8	3.97
Centerville f.....	92	42	68.7	1.59	Marmaton f.....	102	50	75.0	1.77
Charles City f.....	97	51	74.2	2.85	Medicine Lodge f.....	102	50	75.0	1.77
Clarinda f.....	92	42	68.7	1.59	Minneapolis f.....	98	52	76.3	2.15
Clinton f.....	96	45	73.7	1.81	Monument f.....	103	50	75.4	2.90
College Springs f.....	99	47	74.8	2.95	Morland f.....	104	48	74.2	3.34
Corning f.....	95	47	71.5	1.95	Morse f.....	98	48	75.2	2.23
Corydon f.....	92	45	72.0	1.27	Morton f.....	104	52	78.0	1.71
Cresco f.....	88	40	68.3	2.65	New England Ranch f.....	104	43	75.6	4.66
Decorah f.....	90	43	70.0	2.91	Oakley f.....	102	49	75.6	3.92
Delaware f.....	92	42	69.3	3.09	Oberlin f.....	102	49	75.6	3.92
Denison f.....	94	46	70.6	2.43	Ogallah f.....	102	65	78.7	2.42
Eagle Grove f.....	94	46	70.6	2.43	Oswego f.....	108	57	78.7	2.42
Fairfield f.....	94	48	71.2	1.94	Page City f.....	103	56	75.3	2.61
Fayette f.....	94	40	70.2	2.30	Phillipsburg f.....	100	46	75.6	2.61
Fort Madison f.....	96	56	77.2	1.57	Plainville f.....	102	49	75.6	3.70
Glenwood f.....	102	54	74.8	2.96	Pleasant Dale f.....	102	49	75.6	3.70
Grand Meadow f.....	94	45	68.1	4.11	Quinter f.....	103	51	77.0	1.71
Greenfield f.....	94	44	69.8	1.69	Rome f.....	103	51	77.0	1.71
Grinnell f.....	91	51	72.8	2.15	Salina f.....	97	55	76.6	4.49
Grundy Center f.....	92	42	69.5	1.64	Sedan f.....	102	52	78.7	3.40
					Sharon Springs f.....	105	60	74.4	4.50

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
<i>Kansas—Cont'd.</i>					<i>Maine—Cont'd.</i>				
Shields†	98	42	70.0	4.12	Lewiston ¹	87	50	67.3	8.11
Sterling†	98	48	76.6	0.65	Mayfield	86	43	64.6	9.19
Topeka	96	48	74.9	5.14	Orono† ¹	87	43	66.4	6.41
Tribune†	107	45	74.6	2.96	Petit Menan* ¹	75	50	61.3	...
Ulysses†	100 ^a	60 ^a	83.3 ^a	0.68	Sorrento	82	46	65.0	5.53
Wakefield* ¹	106	58	77.8	5.65	West Jonesport* ¹	80	49	61.4	...
Wa Keeney* ¹	101	53	74.6	4.20	<i>Maryland.</i>				
Wallace a†	...	...	...	4.74	Barren Cr'k Sp'gs† ¹	92	57	75.2	3.10
Wallace b* ¹	106	54	78.4	1.50	Boettcherville ¹	98	58	75.0	1.00
Weskan a*	105	54	...	1.80	Cumberland a†	94	58	75.2	1.90
Winona	...	...	...	2.20	Cumberland b	101	59	78.2	2.03
Yates Center†	101 ^c	48 ^c	76.8 ^c	5.39	Darlington†	94	57	74.0	3.30
<i>Kentucky.</i>					Easton†	95	57	76.2	1.09
Bowling Green†	...	...	...	2.57	Edgemont†	99	56	78.6	...
Burnside†	...	...	...	4.41	Fallston* ¹	92	58	72.1	4.10
Caddo ¹	92 ^a	66	75.8	4.15	Frederick ¹	95	58	76.0	1.68
Canton*† ¹	93	52	74.9	1.23	Great Falls* ⁵	94	61	76.0	0.78
Carrollton*† ¹	94	55	74.9	1.49	Jewell* ²	84	69	77.2	2.47
Catlettsburg†	...	...	...	1.60	Leonardtown†	94	61	76.6	1.21
Cloverport	...	...	...	2.25	McDonogh	92	69	74.1	2.39
Earlington	94	53	76.3	4.70	Mt. St. Marys Col†	...	...	72.9	3.39
Falmouth†	...	...	...	5.40	New Market* ¹	94	58	73.3	2.27
Frankfort†	...	...	...	1.00	Solomons†	95	66	78.0	2.89
Franklin*† ¹	93	62	76.1	3.95	Taneytown†	...	...	...	0.58
Georgetown† ^g	...	...	...	0.11	Woodstock ¹	94	58	73.4	2.45
Grand Rivers	92	47	75.0	3.17	<i>Massachusetts.</i>				
Greensburg* ¹	94 ^b	56 ^b	73.9 ^b	5.29	Adams a	89	51	67.8	...
Harrodsburg† ¹	95	50	73.3	4.65	Adams b	...	...	...	0.42
Hopkinsville	...	...	...	0.63	Amherst ¹	88	52	68.0	7.14
Lancaster ^a	...	...	...	3.55	Amherst Ex. St'n a ¹	90	52	67.8	7.50
Louisia†	94	47	74.5	1.44	Amherst Ex. St'n b.	94	50	68.9	6.48
Middlesboro ¹	90	51	72.2	4.45	Ashland	...	...	...	4.40
Mount Sterling ¹	92	50	71.6	1.96	Blue Hill (sum't.)	90	51	67.6	5.68
Munfordville† ²	...	...	75.3 ¹	1.30	Blue Hill (valley)	93	50	69.0	5.15
Paduch a†	...	...	...	3.95	Boston	...	...	...	4.60
Paduch b†	92	58	77.6	3.48	Cambridge a	95	53	71.0	6.65
Pellville†	92	47	75.2	3.46	Cambridge b	92	52	69.6	6.12
Princeton†	95	50	76.2	2.20	Chestnut Hill	95	53	70.1	5.92
Richmond ¹	92	55	74.4	0.80	Chicopee	...	...	...	8.01
Robard	...	...	...	0.92	Clinton	...	...	...	3.65
Russellville*† ¹	89	56	74.1	1.78	Concord a†	93	50	68.4	4.20
Shelby City ^a	...	...	...	2.18	Concord b	91	50	67.6	4.29
Shelbyville† ¹	96	45	74.5	2.40	Cotuit	88	55	68.8	3.56
South Fork† ⁸	...	...	71.5	2.19	Dudley ¹	93	51	68.8	4.74
Springfield†	...	...	...	2.34	Egg Rock, Nahant.	86	55	67.2	...
Verailles	...	...	...	3.38	Fall River a* ¹	90	55	70.2	5.30
Wickliffe*† ¹	92	56	76.1	5.22	Fiskdale	...	...	...	5.79
Williamsburg a†	...	...	...	8.10	Fitchburg a* ¹	90	52	67.4	7.75
Williamsburg b	94	51	75.4	8.45	Fitchburg b	92	51	68.5	6.83
<i>Louisiana.</i>					Florida b	83	48	64.3	7.18
Abbeville	98	68	82.8	9.35	Framingham	94	48	68.6	4.48
Alexandria†	98	64	80.0	2.64	Gilbertville	90	50	68.0	7.40
Amité†	96	64	81.1	5.89	Groton	90	52	68.4	5.73
Baton Rouge†	90	68	79.6	7.39	Heath* ⁶	90	50 ^a	68.3 ^a	...
Cameron†	99	63	80.0	4.46	Hyannis* ¹	95	60	74.1	2.08
Cheneyville†	93	69	81.2	3.98	Kendall Green	93	55	71.0	3.76
Clinton	98	68	81.5	9.75	Lake Cochituate	96	47	69.0	3.79
Coushatta a†	...	...	...	5.23	Lawrence	94	53	69.7	3.47
Coushatta b†	98	65	80.5	6.47	Leicester	89	48	67.2	6.65
Covington† ^o	94	69	81.4	2.64	Leominster	...	...	...	6.56
Davis	94	58	78.7	3.05	Long Plain* ⁶	88	54	70.3	6.00
Delhi†	...	...	...	5.44	Lowell a	92	52	70.0	4.31
Donaldsonville†	90	64	80.0	4.84	Lowell b	93	52	68.4	...
Emilie	92	70	81.4	5.56	Lowell c	95	52	69.4	...
Farmerville*	94	58	79.4	2.70	Ludlow a	87	48	66.3	6.22
Girard†	...	...	...	3.55	Lynn	90	55	69.4	6.95
Grand Coteau	92	70	79.9	2.25	Mansfield* ¹	95	57	69.4	3.30
Hammond	...	...	...	6.57	Medford	...	...	...	6.30
Homert†	94	65	78.6	5.09	Middleboro	92	49	66.6	4.43
Houma†	93	68	80.0	9.20	Milton* ¹	89	52	66.4	4.70
Jeannerette	97	67	81.8	4.20	Monroe	87	48	65.1	6.43
Lafayette†	93	68	80.7	3.80	Monson	92	52	69.0	5.69
Lake Charles†	97	58	75.8	4.05	Mount Nonotuck	...	...	...	6.63
Lawrence†	92	73	82.6	9.30	Mystic Lake	...	...	...	5.05
Liberty Hill	98	58	80.0	3.79	Mystic Station	88	53	66.6	4.88
Marksville†	96	68	79.4	5.00	Nahant	86	55	67.6	4.59
Maurepas	91	68	79.2	5.42	New Bedford a* ¹	90	51	69.0	3.82
Melville†	98	71	81.8	7.01	New Bedford b	...	...	...	5.98
Minden†	99	65	81.0	3.09	Newburyport b	92	55	72.4	5.98
Monroe†	94	64	79.9	3.91	North Billerica	94	53	70.6	5.74
Natchitoches†	93	64	78.3	4.31	Plymouth* ¹	89	58	69.4	4.16
New Iberia	91	68	81.0	7.02	Princeton	89	48	66.5	7.33
N. La. Ex. Station	93	65	78.8	4.38	Provincetown	91	56	70.2	3.70
Opelousas†	92	70	78.9	7.62	Randolph	...	...	...	3.05
Paincourtville	94	69	80.8	7.13	Roberts Dam	90	...	...	5.27
Plain Dealing	96	64	78.2	6.20	Roxbury	90	54	69.0	10.12
Rayne†	95	69	81.4	4.26	Royalston* ¹	88	54	67.9	6.81
Schriever†	100	68	81.8	7.52	Salem b	...	...	...	2.92
Shell Beach	92	70	81.1	6.66	Somerset* ¹	96	56	73.4	2.89
Sugar Ex. Station†	95	71	82.2	8.66	South Hingham	91	52	71.0	6.58
Thibodeaux	...	...	...	5.73	Springfield Army ^y	91	52	71.0	2.76
Wallace	98	69	81.9	7.96	Taunton a ¹	94	53	69.6	2.79
West End	...	...	...	6.91	Taunton b	93	52	69.0	2.68
Winnaboo	96	53	78.0	2.10	Taunton c	94	49	69.0	2.87
<i>Maine.</i>					Taunton d ¹	97	52	69.6	2.87
Bar Harbor	85	49	...	5.09	Wakefield	93	53	69.3	4.12
Belfast* ⁶	83	50	65.5	5.38	Waltham	...	...	...	6.18
Bethel	87	38	63.4	5.59	Webster	...	...	...	5.37
Calais	83	45	64.6	4.64	Wellesley	92	49	68.5	6.40
Cornish* ¹	94	47	66.6	11.12	Westboro ¹	93	50	69.0	4.58
East Machias†	80	42	63.8	4.87	Williamstown ¹	89	53	66.9	4.59
Fairfield	88	44	66.8	5.08	Winchester	...	...	...	5.59
Farmington†	97	39	67.0	5.59	Worcester	92	52	69.8	...
Houlton†	88	37	64.8	5.74					
Kennebec Arsenal	88	43	66.7	6.03					

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Michigan.	°	°	°	In.	Minnesota—Cont'd.	°	°	°	In.
Adrian.....	96	49	70.8	4.32	Sheldon.....	96	68.6	2.90	
Albion.....	90	49	71.5	1.98	Wabasha.....	96	70.0	1.83	
Allegan.....	94	45	70.8	1.48	Mississippi.				
Alma.....	91	41	67.8	3.93	Aberdeen.....	92	62	77.0	6.09
Ann Arbor.....	94	52	70.2	1.25	Agricultural College.....	92	65	75.9	5.88
Arbela.....	85	30	66.8	2.26	Batesville.....	92	62	77.5	2.25
Ball Mountain.....	93	52	67.9	2.90	Brookhaven.....	96	64	79.6	6.29
Bear Lake.....	86	41	64.6	3.04	Canton.....	91	69	77.8	3.42
Bellaire.....	91	36	62.8	2.57	Columbus.....	92	68	78.8	6.38
Benton Harbor.....	95	50	70.0	1.25	Columbus.....	99	65	81.8	6.25
Bensonia.....	95	45	64.9	3.13	Corinth.....	93	60	77.6	6.66
Berlin.....	97	54	71.2	1.62	Crystal Springs.....	97	68	80.6	0.93
Berrien Springs.....	93	38	67.6	2.72	Duck Hill.....	93	65	78.2	5.82
Birch Run.....	93	38	67.6	1.89	Edwards.....	95	69	81.1	5.15
Birmingham.....	95	50	69.1	0.94	Enterprise.....	92	57	79.0	3.44
Bronson.....	90	43	70.9	1.20	Fayette.....	91	69	79.4	3.34
Brown City.....	94	47	68.4	3.16	Greenville.....	92	68	79.8	3.50
Caldwell.....	88	43	65.7	4.52	Hattiesburg.....	98	72	82.2	0.07
Calumet.....	87	41	64.7	3.30	Hastings.....	96	63	78.4	3.18
Charlevoix.....	91	41	67.5	2.58	Hernando.....	94	64	79.2	5.32
Clinton.....	95	45	70.6	1.20	Holly Springs.....	94	58	77.2	5.10
Concord.....	93	45	69.7	0.93	Jackson.....	94	58	79.2	1.51
Crystal Falls.....	85	40	63.6	1.74	Kosciusko.....	90	65	77.2	5.40
Evart.....	94	49	65.9	3.63	Lake.....	100	64	80.8	0.77
Fairview.....	93	48	69.8	1.51	Louisville.....	92	63	76.8	3.88
Fitchburg.....	95	41	68.0	1.74	Macon.....	97	67	80.9	4.55
Flint.....	94	39	67.9	1.92	Moss Point.....	94	68	81.3	8.50
Fremont.....	91	41	66.3	3.41	Natchez.....	94	67	80.8	5.62
Gaylord.....	87	36	64.2	4.28	Okolona.....	96	63	79.4	3.12
Glenwood.....	94	50	69.0	1.17	Palo Alto.....	90	65	77.7	4.05
Grand Rapids.....	90	51	69.9	2.28	Port Gibson.....	96	66	80.1	4.95
Grape.....	92	52	70.1	3.16	Ship Island.....	95	74	84.8	0.66
Grayling.....	88	34	64.5	4.24	Vaiden.....	100	62	80.3	3.98
Hanover.....	91	50	70.5	1.05	Water Valley.....	99	68	78.6	5.32
Harbor Springs.....	88	42	65.6	3.16	Waynesboro.....	94	64	80.6	5.48
Harrisville.....	89	42	63.4	8.71	Yazoo City.....	94	64	77.3	7.39
Hart.....	90	45	67.1	3.70	Missouri.				
Hayes.....	91	42	66.7	3.32	Adrian.....	100	40	71.8	2.30
Highland Station.....	96	44	69.4	1.29	Appleton City.....	97	50	76.4	4.78
Hillsdale.....	92	52	71.4	1.13	Ava.....	97	50	76.4	3.71
Howell.....	95	39	68.8	2.05	Bethany.....	97	49	74.6	3.00
Ivan.....	91	41	66.4	4.28	Big Piney.....	97	49	74.6	2.80
Jeddo.....	93	46	66.5	2.98	Brunswick.....	94	51	75.0	3.70
Kalamazoo.....	92	52	71.7	2.51	Canton.....	94	51	75.0	0.88
Lake City.....	82	49	68.0	5.36	Carrollton.....	95	52	75.2	1.59
Lansing.....	92	39	68.0	3.26	Chamois.....	95	52	75.2	0.78
Lathrop.....	92	42	66.6	2.45	Chillicothe.....	100	50	78.1	0.80
McMillan.....	87	29	60.6	1.99	Clinton.....	94	54	74.8	1.33
Madison.....	92	51	69.1	3.75	Conception.....	94	49	74.5	4.55
Marshall.....	94	50	70.5	3.51	Concordia.....	102	52	74.5	0.97
Mayville.....	92	52	69.2	2.21	Dadeville.....	98	48	76.2	1.28
Mottville.....	97	46	71.4	0.62	Darksville.....	98	48	76.2	0.90
Noble.....	84	36	70.9	1.33	East Lynne.....	98	46	77.4	3.37
North Aurelius.....	90	43	67.5	3.57	Edge Hill.....	94	46	73.4	4.10
North Marshall.....	90	43	67.5	3.57	Eldon.....	94	52	74.4	2.26
Ovid.....	92	44	68.1	2.67	Excelsior Springs.....	94	52	71.9	2.20
Parkville.....	96	52	71.4	1.14	Fayette.....	100	49	77.0	2.29
Rawsonville.....	88	31	65.5	4.03	Fox Creek.....	92	58	75.5	1.00
Rockland.....	87	44	64.0	2.77	Fulton.....	92	58	75.5	1.00
Saint Ignace.....	94	33	64.3	3.86	Gainesville.....	96	54	75.6	7.00
Sand Beach.....	95	41	67.6	3.51	Gallatin.....	96	54	75.6	1.70
Standish.....	95	47	69.6	2.39	Galt.....	96	54	75.6	1.70
Thornville.....	95	47	69.6	2.39	Gayoso.....	96	48	74.9	3.33
Vandalia.....	91	53	70.5	0.89	Glasgow.....	96	48	74.9	3.33
Vienna.....	98	47	69.2	2.23	Glensted.....	100	51	75.2	5.58
Washington.....	90	33	65.5	4.20	Gordonville.....	89	51	75.2	5.58
Weldon Creek.....	93	48	68.8	0.49	Gorin.....	95	49	76.9	2.41
White Pigeon.....	90	53	69.3	3.53	Grove Dale.....	95	49	76.9	2.41
Williamston.....	90	53	69.3	3.53	Harrisonville.....	90	51	75.1	2.51
Ypsilanti.....	95	50	69.4	1.34	Harviell.....	94	57	75.2	1.87
Minnesota.					Hermann.....	99	53	77.4	2.61
Albert Lea.....	87	41	67.8	1.53	Independence.....	99	53	77.4	2.61
Alexandria.....	87	36	67.4	2.82	Irena.....	99	53	77.4	2.61
Alma City.....	87	36	67.4	2.82	Iron.....	99	53	77.4	2.61
Ash Creek.....	94	40	68.2	3.53	Jefferson City.....	96	50	77.6	1.38
Bird Island.....	87	42	66.9	7.25	Lamar.....	95	52	76.3	1.42
Cambridge.....	90	36	66.6	2.98	Lamonte.....	95	52	76.3	1.42
Camden.....	91	39	68.6	4.76	Langdon.....	101	53	73.3	3.66
Canton.....	87	43	69.4	2.82	Lebanon.....	95	50	74.3	3.37
Clear Lake.....	85	43	67.7	.....	Lexington.....	96	51	74.6	2.62
Crookston.....	95	36	69.0	2.39	Liberty.....	100	48	75.2	1.90
Easton.....	92	39	69.9	1.65	Linn Creek.....	94	51	76.4	2.03
Farmington.....	93	36	69.6	3.42	Linneus.....	100	58	78.6	0.36
Fergus Falls.....	91	43	68.8	4.80	Mansfield.....	100	47	76.2	1.40
Fort Ripley.....	88	38	65.5	1.94	Marshall.....	100	47	76.2	1.40
Grand Meadow.....	94	41	69.6	5.82	Mexico.....	98	51	75.6	2.29
Granite Falls.....	91	37	66.8	3.88	Mine La Motte.....	92	48	75.9	2.44
Jackson.....	91	37	66.8	3.88	Mount Vernon.....	99	48	77.4	4.92
Kinbrae.....	87	38	65.8	2.77	Neosho.....	93	44	71.2	1.68
L. Winnibogishish.....	87	44	65.5	2.64	New Boston.....	94	54	76.0	3.35
Leech Lake.....	86	34	64.2	3.78	New Haven.....	94	54	76.0	3.35
Long Prairie.....	88	42	68.0	5.73	New Palestine.....	96	53	76.6	1.18
Maple Plain.....	87	42	68.5	4.70	Oakfield.....	97	50	76.5	2.57
Montevideo.....	90	41	67.8	3.52	Olden.....	97	50	76.5	2.57
Morris.....	91	42	70.2	3.80	Oregon.....	97	50	76.5	2.57
Northfield.....	87	43	68.4	5.03	Oregon b.....	97	48	73.6	2.03
Ortonville.....	85	46	66.7	4.95	Oto.....	97	48	73.6	2.03
Pine River.....	91	37	66.4	3.55	Phillipsburg.....	95	57	78.4	4.03
Pokegama Falls.....	91	37	66.4	3.55	Pickering.....	98	50	75.8	3.12
Redwood Falls.....	87	43	67.4	2.33	Platte River.....	97	54	71.1	3.80
Rolling Green.....	87	43	67.4	2.33	Poplar Bluff.....	92	51	76.6	5.15
Saint Charles.....	87	40	66.4	2.44	Princeton.....	99	49	74.5	3.10
Saint Olof.....	89	41	67.6	4.60	Rea.....	99	50	74.3	3.33
Sandy Lake Dam.....	85	37	65.6	2.70	Saint Joseph.....	99	50	74.3	3.33

Meteorological record of voluntary observers, &c.—Continued.

Temperature. (Fahrenheit.)				Precip'n.	Temperature. (Fahrenheit.)				Precip'n.
Stations.	Max.	Min.	Mean		Stations.	Max.	Min.	Mean	
Missouri—Cont'd.					Nevada—Cont'd.				
Saint Louis a	96	49	74.6	1.35	Hawthorne b	98	55	75.5	0.03
Saint Louis b	99	59	77.2	1.17	Hot Springs *1	100	64	82.1	0.00
Sedalia	97	53	76.4	0.29	Humboldt *1	95	54	74.5	0.00
Shelbina	93	58	73.2	1.30	Lewers Ranch	92	46	68.4	T.
Stanberry *2	93	58	73.2	3.41	Lovelock *1	100	64	79.2	0.00
Steelville *	89	48	71.0	1.50	McDermitt	100	28	73.2	0.00
Stelladaf	98	48	77.2	0.89	Mill City *1	103	55	78.5	0.00
Strother	98	48	77.2	2.44	Monitors Ranch	94	27	64.0	0.10
Vancleave	93	55	74.5	3.30	Palisade *1	98	40	72.4	0.00
Vernont *†	93	55	74.5	0.71	Palmetto	94	36	67.0	T.
Warrensburg *1	96	57	76.0	2.63	Pioche	104	49	74.8	0.00
Warrenton b	99	61	77.4	1.30	Reno *1	91	58	73.2	0.00
Wellsville	94	49	76.4	2.20	Reno State Univ' s y	93	41	72.8	0.00
Wheatland	94	49	76.4	3.06	Saint Clair	94	44	72.6	0.00
Whiteside *1	94	49	76.4	1.68	South Camp †	91	40	69.4	0.10
Withers Mills	94	49	76.4	1.35	Stofel s	90	22	57.6	0.00
Montana.					New Hampshire.				
Camp Poplar River.	104	40	67.4	0.20	Sunnyside	103	30	65.6	0.17
Fort Keogh	108	40	72.0	0.59	Tecoma *1	98	50	74.1	0.05
Fort Missoula	100	33	64.6	0.35	Tonno *1	98	50	77.2	0.15
Nebraska.					Tuscarora.				
Agee *2	97	38	73.5	3.63	Tybo.	104	35	72.2	T.
Albion	97	38	70.8	2.76	Verdi *1	95	39	69.2	0.00
Ansley †1	102	37	73.7	3.43	Wabaska *2	90	47	67.2	0.00
Arberville *1	105	47	72.3	2.67	Wadsworth *1	100	64	81.1	T.
Ashland *1	99	53	73.5	4.08	Wells *1	100	50	75.0	0.00
Ashton	99	53	73.5	3.13	Winnemucca *1	92	50	73.6	0.00
Auburn a *†	100	50	74.4	4.28	New Hampshire.				
Beatrice †	99	45	73.1	2.55	Antrim	98	37	63.6	9.25
Brandon	99	45	73.1	2.40	Belmont	98	37	63.6	9.81
Cooleyton	92	50	73.6	3.81	Berlin Mills	88	37	63.6	5.79
Cornlea *	102	49	73.6	5.50	Brookline	98	37	63.6	8.20
Craigton †1	99	42	68.9	4.09	Concord a	90	52	67.4	9.00
Crete *1	98	48	72.5	2.36	East Canterbury	89	43	67.1	11.16
Culbertson a †	99	42	72.5	3.83	Grafton	91	45	67.0	11.43
David City *†2	94	50	72.2	4.10	Groveton *1 s	88	45	64.3	6.10
De Soto *1	99	48	71.6	3.36	Hanover a	86	48	66.0	6.25
Dunning *	99	42	74.9	1.19	Lakeport	98	48	66.0	8.66
Ericson *†1	99	50	72.8	2.43	Littleton	85	41	63.2	7.85
Ewing *†1	102	54	71.8	2.65	Manchester 1	90	54	68.6	6.53
Fairbury *	97	50	72.2	2.65	Mine Falls.	95	52	69.0	5.97
Falls City *†5	101	60	83.0	2.86	Nashua	95	52	69.0	5.28
Fort Robinson	98	39	70.2	1.94	Newton	92	48	67.7	4.29
Fort Sidney	103	37	71.0	1.54	North Conway	90	44	66.0	4.27
Franklin	99	44	75.0	3.66	Pennichuck Station	98	44	66.0	5.45
Freumont *1	96	50	72.1	2.71	Peterboro	94	45	67.2	7.09
Genoa †1	97	50	72.0	5.81	Plymouth 1	94	46	64.0	10.85
Geiring †1	101	42	71.9	1.16	Sanbornston	89	48	65.6	10.10
Haiger *1	103	55	77.8	3.91	Stratford.	92	40	68.4	6.93
Hartington	98	43	71.6	3.99	Walpole	88	50	67.8	5.65
Harvard *1	101	49	73.6	1.76	West Milan	84	34	63.0	8.38
Hastings *†1	92	52	72.2	2.19	Wiers Bridge	98	44	66.0	9.31
Hayes Center *†1	104	53	73.1	2.55	Wolfboro	98	44	66.0	6.25
Imperial *	102	50	73.6	4.00	New Jersey.				
Kennedy *†1	95	50	71.4	3.68	Allaire	92	54	70.8	.....
Kimball †	104	36	67.4	1.22	Asbury Park.	88	59	72.9	3.63
Lexington †	113	41	73.8	3.56	Bayonne	96	58	74.6	3.69
Lincoln 1	98	48	73.4	3.76	Belleville	96	58	74.6	4.00
Marquette *	100	50	73.0	3.27	Belvidere	96	51	72.3	3.89
Minden *1	102	46	73.1	4.55	Beverly †1	97	56	71.7	3.62
Mullen *†1	108	58	78.7	2.87	Bivale	98	52	72.2	1.68
Nebraska City *†1	102	50	76.1	4.37	Bridgeton a	95	62	76.2	2.81
Nesbit	98	43	71.4	3.06	Bridgeton b	96	60	76.4	2.41
Norfolk †1	98	40	73.1	3.37	Cape May †	90	56	73.7	0.72
North Loup †1	95	40	70.9	2.76	Dover	92	50	70.2	4.53
Oakdale †1	97	43	70.9	2.76	Egg Harbor City 1	95	54	71.4	5.62
O'Neill *	101	47	72.2	4.28	Elizabeth †	94	59	73.5	4.57
Orleans *†1	96	52	75.5	3.58	Franklinville	93	54	72.4	4.84
Ough b †	98	43	71.4	1.78	Freehold.	92	51	72.2	4.70
Plattsmouth †	98	43	71.4	2.22	Gillette.	93	55	72.2	4.30
Precept *	99	43	73.7	3.78	Hammonston	98	44	66.0	2.37
Ravenna	98	42	79.3	4.17	Hanover	91	52	71.1	4.66
Seward *2	98	50	74.3	2.47	Highland Park †	94	58	73.4	3.38
Springview	103	44	73.0	3.88	Hightstown *	93	58	73.3	2.25
Stanton	98	43	73.0	4.14	Imlaystown.	95	57	74.4	4.00
Superior *1	105	46	72.8	2.51	Junction	98	52	72.2	3.55
Syracuse *	100	57	74.1	2.71	Locktown	94	56	73.0	2.88
Turkington *1	104	55	76.9	4.05	Moorestown 1	94	57	72.4	3.70
Wallace *1	100	50	73.6	2.40	Newark a	93	59	72.9	3.97
Weeping Water *1	101	47	70.1	2.86	Newark b	94	59	73.5	3.82
West Point †	98	45	71.1	5.85	New Brunswick a	99	56	75.2	3.46
Whitman *1	103	50	73.0	6.69	New Brunswick b.	91	39	72.6	3.58
Wilcox a	98	50	75.5	6.69	Newton †	93	53	71.0	4.40
Wilcox b *1	98	50	75.5	6.69	Ocean City 1	94	61	74.2	1.90
York *1	102	58	77.5	2.90	Oceanic	94	62	73.6	4.51
Nevada.					Paterson	93	57	73.4	4.96
Austin	89	43	69.3	T.	Pensauken	98	52	72.2	1.91
Battle Mountain *1	99	53	75.2	0.00	Plainfield	98	57	75.2	3.60
Belleville *1	100	62	73.8	T.	Rancocas *	95	63	73.0	3.26
Belmont	88	44	68.6	T.	Readington *2	92	62	75.2	.....
Beowawe *1	95	60	77.4	0.00	River Vale *1	93	52	72.4	4.10
Brown *1	104	63	84.3	0.00	Salem.	94	53	72.2	3.70
Candelaria	94	50	72.2	0.00	Somerville	97	57	75.4	3.81
Carlin *1	100	45	70.6	0.00	South Orange †1	93	58	71.3	4.53
Carson City 1	94	30	69.3	0.02	Tenafly	91	46	70.8	4.68
Downeyville	103	50	73.0	T.	Toms River.	98	61	77.0	2.71
Elko *1	98	45	70.0	0.00	Trenton *1	95	64	78.0	3.25
Elko, near	105	29	69.2	0.00	Vineland	93	57	73.8	5.65
Ely	91	35	60.4	0.03	West Summit	89	55	70.2	.....
Eureka	92	32	67.9	0.03	Whiting	97	55	72.2	3.24
Penelon *1	105	45	73.6	0.00	Woodbine.	94	51	72.6	1.95
Genoa	91	43	71.1	T.	New Mexico.				
Jolconda *1	100	58	75.7	0.00	Albert †	103	53	77.2	0.96
Halleck *1	102	46	70.9	0.00	Albuquerque †	97	59	76.4	0.21
Hawthorne *1	96	61	80.6	0.00	Bloomfield.	102	36	74.2	T.
					Chama †	99	43	68.4	0.42

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)				Precip'n.	Stations.	Temperature. (Fahrenheit.)				Precip'n.
	Max.	Min.	Mean				Max.	Min.	Mean		
<i>New Mexico—Con.</i>	0	0	0		<i>Ins.</i>	<i>New York—Cont'd.</i>	0	0	0	<i>Ins.</i>	
Coolidge †	92	31	62.1	0.14		Watkins.....	94	50	69.7	2.01	
Deming *†	105	58	85.0	0.39		West Chazy.....	95	50	70.7	8.98	
Dulce †	95	26	64.7	0.06		West Point.....	95	50	70.7	3.07	
East Las Vegas †	93	41	66.8	0.79		Willets Point.....	90	59	73.1	5.10	
Embudo.....	105	49	76.4	0.17		<i>North Carolina.</i>					
Estadina Springs †	92	43	66.5	0.76		Asheville†.....	90	49	71.2	1.64	
Fort Bayard.....	93	50	71.8	1.27		Bakersville†.....	90	49	71.2	3.34	
Fort Wingate.....	97	45	71.3	0.30		Bryson City†.....	105	60	82.0	0.82	
Gallinas Spring †	101	50	74.4	0.76		Chapel Hill†.....	105	60	82.0	0.82	
Halls Peak †	95	27	59.1	1.37		Columbus.....	82	52	67.2	6.00	
Hillsboro †	94	52	74.4	1.22		Concord.....	95	60	77.6	2.43	
Hills Ranch ††	101	41	71.4	1.52		Curtis Inlet †.....	101	50	77.0	7.01	
La Luz †	88	60	75.2	0.51		Douglas.....	95	64	80.1	4.85	
Lordsburg *†	99	70	84.2	0.20		Fayetteville†.....	95	64	80.1	4.85	
Los Lunas †	99	35	67.0	0.00		Goldsboro †.....	90	62	77.8	0.83	
Monero †	94	28	62.9	0.37		Horse Cove *††	84	58	70.4	10.15	
Olio †	101	42	73.6	0.14		Lenoir *†	86	60	73.1	2.40	
Socorro †	102	56	78.5	0.17		Lexington†.....	96	57	77.3	4.18	
Springer †	97	40	68.7	1.26		Lillington†.....	96	57	77.3	6.39	
Taos †	99	37	69.0	1.00		Littleton†.....	96	57	77.3	6.39	
<i>New York.</i>						Louisburg ††	90	61	78.4	4.88	
Adams Center.....	94	47	67.5	3.62		Lumberton†.....	96	62	80.0	4.91	
Addison†	94	47	67.5	3.62		Marion.....	91	57	74.6	3.56	
Akron.....	92	43	66.1	3.72		Morgantown *††	90	62	75.8	2.02	
Alfred Center.....	89	41	65.4	4.78		Mount Airy †.....	92	53	74.0	6.01	
Arcade†	89	41	65.4	4.78		Mount Holly †.....	94	59	75.9	4.43	
Attica.....	94	47	67.5	3.75		Mount Pleasant †	94	59	75.9	4.43	
Au Sable Forks.....	94	47	67.5	3.75		Murphy†.....	92	55	77.8	2.90	
Avon.....	94	47	67.5	3.75		Newbern†.....	92	55	77.8	2.90	
Baldwinsville†	93	52	69.1	5.07		Oak Ridge †.....	95	55	76.8	2.90	
Bedford.....	93	52	69.1	5.07		Pittsboro.....	94	59	77.2	0.92	
Bethlehem Center.....	90	48	68.1	6.10		Salisbury.....	91	67	80.5	1.61	
Binghamton ††	90	48	68.1	6.10		Saxon†.....	98	52	76.4	4.81	
Bish Lodge.....	83	45	64.0	9.07		Smithfield.....	96	62	78.9	2.30	
Bloods Depot.....	90	46	68.2	8.01		Soapstone Mt††	95	55	76.8	5.88	
Boys Corners *†	92	46	68.2	8.01		Southern Pine f.....	101	57	78.6	5.05	
Brookfield†	92	46	68.2	8.01		Tarboro.....	97	63	80.6	4.32	
Canaseraga†	87	44	65.3	3.36		Weldon†.....	96	61	78.2	6.59	
Canton†	87	44	65.3	3.36		Willeyton.....	93	55	77.2	4.00	
Carmel.....	90	50	69.4	7.41		<i>North Dakota.</i>					
Chenango Forks.....	90	50	69.4	7.41		Ashley†.....	95	34	66.0	3.47	
Cherry Creek.....	85	44	63.3	8.19		Bottineau†.....	92	37	66.6	2.15	
Conestogville ††	88	48	65.4	7.06		Churchs Ferry †.....	95	30	65.8	2.86	
Cooperstown†	88	48	65.4	7.06		Dawson†.....	96	40	65.6	3.69	
Corning.....	89	49	67.0	4.77		Ellendale††	96	33	72.4	1.61	
Cortland.....	89	49	67.0	4.77		Fargo †.....	88	36	67.4	4.03	
De Kalb Junction.....	89	49	67.0	4.77		Forman†.....	98	36	67.7	2.63	
Dempster.....	89	49	67.0	4.77		Fort Stevenson †.....	98	41	68.6	0.74	
Deposit.....	89	49	67.0	4.77		Fort Yates.....	102	44	70.8	1.84	
Dunkirk b.....	83	53	68.4	4.92		Gallatin *††	92	32	62.9	3.30	
Easton.....	98	47	70.2	6.64		Grafton†.....	94	33	65.4	3.23	
Eden Center.....	94	55	71.7	3.28		Grand Forks††	91	33	65.8	1.42	
Elmira *††	94	55	71.7	3.28		Grand Rapids††	99	32	68.1	1.37	
Factoryville††	94	55	71.7	3.28		Hope†.....	96	32	67.6	1.39	
Fort Niagara.....	92	55	71.8	3.39		Lakota†.....	91	33	68.3	1.39	
Galway.....	96	47	69.1	5.67		Milton†.....	94	30	66.7	2.65	
Geneva†	91	47	69.1	5.67		Minto†.....	95	33	66.5	2.99	
Gio.....	91	47	69.1	5.67		Napoleon ††	95	35	67.8	3.59	
Hammondsport.....	95	48	68.1	4.77		Power†.....	94	37	67.4	2.46	
Hess Road Stat'n†	91	46	68.1	4.77		Saint Johnst.....	89	35	64.8	1.29	
Honeyhead Brook†	89	52	67.9	7.41		Seymour *†.....	95	48	69.8	2.12	
Humphrey†	90	43	66.5	4.45		Valley City f.....	95	35	67.5	2.01	
Ithaca†	93	49	69.4	6.91		Wahpeton†.....	92	37	68.0	2.55	
Jamestown *††	90	52	68.9	6.06		White Earth †.....	98	37	66.0	1.66	
Kings Station.....	89	48	67.6	4.29		Wild Rice ††	95	35	65.5	4.07	
Lebanon Springs.....	89	48	67.6	4.29		Willow City†.....	100	33	66.2	1.85	
Le Roy.....	90	50	69.9	3.95		Woodbridge †.....	105	24	67.8	2.84	
Little Valley.....	90	50	69.9	3.95		Yule†.....	104	38	69.2	0.39	
Lockport.....	91	49	69.7	3.59		<i>Ohio.</i>					
Lowville.....	91	49	69.7	3.59		Akron†.....	90	52	70.4	4.82	
Lyndonville.....	91	49	69.7	3.59		Annapolis.....	90	52	70.4	4.82	
McLean.....	91	49	69.7	3.59		Ashland.....	90	56	70.8	3.30	
Madison Barracks.....	93	47	67.4	6.52		Athens†.....	93	50	71.0	2.11	
Malone†	85	48	65.6	9.57		Auburn.....	90	52	69.5	2.96	
Marshall†	95	37	62.9	4.09		Bangorville†	90	52	69.5	2.96	
Middletown.....	91	55	71.1	3.37		Bellevue*†	96	48	69.8	2.64	
Minnewaska†	84	52	65.6	9.82		Bement†.....	98	50	69.8	2.64	
Mount Morris.....	95	44	67.7	5.34		Benton Ridge.....	98	50	69.8	2.64	
Newark Valley.....	95	44	67.7	5.34		Bissells.....	98	50	69.8	2.64	
New Lisbon*†	88	47	64.2	8.70		Bloomington.....	91	52	73.0	4.65	
N'th Hammond††	91	45	66.7	11.78		Caledonia†.....	91	52	73.0	4.65	
Number Four††	86	46	63.1	9.00		Cambridge.....	91	52	73.0	4.65	
Ogdensburg *†	82	55	68.1	6.06		Camp Dennison.....	91	52	73.0	4.65	
Oxford.....	86	46	65.4	7.90		Canton††	93	51	71.1	3.28	
Palermo††	90	45	67.3	7.45		Cardington.....	92	46	66.6	3.40	
Penn Yan.....	92	48	66.1	4.12		Carrollton.....	91	52	71.9	2.35	
Perry City†	92	48	66.1	4.12		Celina†.....	91	52	71.9	2.35	
Phoenix.....	87	48	66.6	7.18		Chicago.....	91	52	71.9	2.35	
Plattsburg B'ks.....	87	48	66.6	7.18		Circleville†.....	91	52	71.9	2.35	
Poughkeepsie.....	87	48	66.6	7.18		Clarksville†	93	50	72.6	2.42	
Quaker Street.....	87	47	66.5	8.33		Cleveland†	92	54	70.2	4.26	
Rome.....	97	48	69.4	7.04		Colebrook.....	92	54	70.2	4.26	
Romulus.....	94	50	69.8	6.06		Dayton†.....	95	53	75.4	1.92	
Schoadack Depot.....	89	58	71.2	5.77		Demos†.....	91	51	71.8	0.95	
Setauket††	89	58	71.2	5.77		Ellsworth.....	91	51	71.8	0.95	
Sherman†	85	43	65.4	8.31		Elyria.....	95	52	71.5	3.66	
South Canisteo†	91	45	64.9	4.83		Findlay.....	93	50	72.2	2.31	
Southeast Rearyr.....	92	42	65.8	6.55		Fostoria†.....	93	50	72.2	2.31	
South Kortright†	91	42	65.8	6.55		Frankfort.....	93	50	72.2	2.31	
Turin.....	85	45	64.4	9.00		Garrettsville†	91	47	67.4	3.26	
Utica.....	92	51	68.1	7.95		Georgetown†	95	52	74.4	1.90	
Victor.....	95	47	69.2	6.51		Gratiot.....	87	52	71.8	3.11	
Wappingers Falls.....	95	47	69.2	6.51		Greenfield.....	88	48	71.5	3.18	
Watertown.....	90	49	67.7	4.21		Green Hill.....	90	49	67.7	4.21	

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Ohio—Cont'd.</i>					<i>Pennsylvania—Con.</i>				
Greenville ¹	87	51	70.3	2.79	Drifton ²	90	51	68.3	4.79
Hackney	93	50	70.5	0.70	Du Bois ¹	92	45	65.9	4.52
Hanging Rock ¹	93	50	70.5	1.92	Dyberry ¹	94	52	71.3	3.90
Harbor ¹	98	51	71.2	3.26	East Mauch Chunk	94	52	71.3	3.90
Hedger	98	51	71.2	1.77	Easton ¹	93	54	72.1	3.70
Hillhouse	98	51	71.2	3.60	Edinburg ¹	88	48	67.7	3.02
Hiram ¹	89	49	68.9	2.19	Emporium ¹	95	49	69.6	3.02
Jacksonboro ¹	94	50	72.7	2.60	F's of Nesheim ¹	93	54	73.8	1.87
Kenton ¹	97	47	73.0	1.17	Freeport ¹	90	55	71.2	2.50
Leipsic	99	56	76.0	2.56	Girardville ¹	90	55	71.2	2.50
Levering	95	52	71.5	2.70	Grampian ¹	93	52	69.4	3.74
Logan ¹	91	46	68.2	2.79	Greensboro ¹	90	55	71.2	2.50
Lordstown ¹	91	46	68.2	2.79	Hamburg	98	55	73.2	3.78
McArthur ¹	91	48	70.4	2.80	Holidaysburg ¹	97	45	70.1	3.53
McConnellsville ¹	94	49	71.9	2.07	Honesdale ¹	89	50	68.1	5.78
Mansfield ¹	94	49	71.9	2.85	Huntingdon ¹	96	47	72.3	4.03
Marietta ¹	91	45	72.8	1.67	Indiana ¹	93	47	70.6	1.90
Marietta ²	91	53	72.8	2.15	Johnstown ¹	97	51	72.4	2.29
Marion ¹	94	48	69.0	4.25	Kane	91	44	65.5	5.25
Millport	96	50	70.8	2.24	Kennett Square ²	90	55	71.9	3.12
Montpelier ¹	96	50	70.8	1.81	Kilmer	94	64	72.3	4.73
New Alexandria ¹	90	53	71.3	0.98	Lebanon ¹	93	52	72.9	3.80
New Berlin	94	49	69.8	3.05	Le Roy ¹	90	51	69.2	4.04
New Cornerstown ¹	93	53	71.8	3.63	Lewisburg	96	51	72.3	4.55
New Holland	93	53	71.8	3.57	Ligonier ¹	93	45	70.0	2.24
North Lewisburg ¹	95	50	74.4	3.00	Lock Haven ¹	93	45	70.0	2.24
North Royalton	94	49	71.9	4.31	Lock No. 4 ¹	93	45	70.0	2.24
Oberlin ¹	93	52	69.5	3.63	Mahoning ¹	96	52	72.4	1.07
O. S. University ¹	90	48	71.3	6.15	McConnellsburg ¹	96	52	72.4	1.07
Orangeville	94	45	69.6	2.70	Newcastle ¹	94	45	69.7	3.31
Pataskala	93	52	73.9	3.26	Oil City ¹	93	45	70.0	3.45
Portsmouth a ¹	93	54	71.9	3.66	Parkers Landing ¹	93	45	70.0	2.73
Portsmouth b ¹	93	54	71.9	3.69	Philadelphia a	97	61	76.1	3.03
Rittman	93	54	71.9	3.27	Philadelphia b	95	60	75.3	4.90
Sharon Center	93	54	71.9	3.78	Philadelphia c	96	56	73.7	3.68
Shenandoah	93	54	71.9	4.43	Phoenixville	90	56	74.0	3.49
Sidney ¹	93	54	71.9	1.12	Pottstown	90	56	74.0	3.49
Springboro	93	54	71.9	1.76	Pottsville	90	56	74.0	3.49
Tiffin ¹	90	52	72.3	2.88	Quakertown ¹	94	54	70.4	5.77
Upper Sandusky ¹	91	49	71.4	2.40	Reading ¹	93	54	73.7	4.57
Van Wert	97	46	70.7	2.70	Ridgway ¹	93	54	73.7	4.57
Walnut	97	46	70.7	4.58	Saegetown	95	42	67.8	4.70
Wauseon ¹	95	47	70.8	2.38	Salem Corners ¹	92	52	67.4	4.77
Waverly ¹	96	50	72.8	5.54	Saltsburg ¹	95	42	67.8	4.70
Waynesville	96	50	72.8	2.79	Selins Grove ¹	99	51	72.5	3.17
Westerville ¹	85 ¹	48 ¹	69.3 ¹	3.38	Somerset ¹	92	44	67.4	2.09
West Milton ¹	96	50	70.3	2.15	South Eaton	90	51	69.7	2.85
Weymouth	95	48	70.5	4.03	State College ¹	91	47	69.6	5.78
Wheeler ¹	95	48	70.5	3.48	Stoystown ¹	91	47	69.6	5.78
Wooster a ¹	92	49	68.7	2.69	Swarthmore	93	56	74.0	3.31
Wooster b ¹	92	49	68.7	2.37	Uniontown ¹	92	53	72.7	2.40
Youngstown ¹	93	52	71.3	4.45	Warren ¹	93	56	74.0	3.31
Zanesville ¹	93	52	71.3	2.74	Wellsboro ¹	92	48	64.0	4.73
<i>Oklahoma Ter.</i>					West Chester	93	58	73.8	3.50
Anadarko ¹	103	49	79.1	3.12	West Newton ¹	93	58	73.8	3.50
Buffalo ¹	102	64	83.6	2.05	Wilkesbarre ¹	95	53	72.2	5.56
Burnett ¹	97	50	75.6	5.54	Wykesbarre ¹	93	50	68.8	4.97
Fort Reno ¹	97	50	75.6	5.54	York	95	52	73.5	2.81
Fort Sill	103	50	75.0	4.06	<i>Rhode Island.</i>				
Gate City ¹	102	47	75.4	4.10	Bristol ¹	84	56	68.2	4.18
Guthrie ¹	109	52	80.5	1.72	Kingston a	90	53	69.0	3.18
Keokuk Falls ¹	98	49	78.1	4.62	Kingston b ¹	89	50	68.3	2.96
Kingfisher ¹	95	64	80.0	4.20	Lonsdale	94	69	81.0	5.01
Mangum ¹	102	53	78.1	2.80	Oliveville	94	53	71.8	3.86
Ponce ¹	103	58	79.9	3.57	Pawtucket	93	55	71.2	3.86
Sac & Fox Agency ¹	102	50	78.6	2.51	Providence a	92	56	72.5	3.07
<i>Oregon.</i>					Providence c	92	54	69.6	2.91
Albany a ¹	94	46	65.6	0.13	<i>South Carolina.</i>				
Albany b ¹	95	48	70.2	0.01	Allendale ¹	95	68	80.9	3.67
Ashland a ¹	89	56	70.4	0.00	Anderson ¹	96	66	79.8	2.76
Aurora ¹	97	47	69.2	0.20	Batesburg ¹	96	66	79.8	5.78
Bandon ¹	69	50	57.0	0.15	Belmont ¹	93	66	78.4	3.05
Brownsville ¹	93	54	70.2	0.16	Blackville ¹	94	69	81.0	5.84
Comstock ¹	94	45	65.2	0.00	Camden ¹	94	64	79.6	2.79
Corvallis b ¹	82	57	70.6	0.00	Cheraw a ¹	94	64	79.6	6.54
East Portland ¹	90	40	60.0	0.06	Cheraw b ¹	94	64	79.6	5.43
Eola	90	46	65.4	0.17	Effingham ¹	90	60	76.0	2.46
Grants Pass b ¹	95	46	67.8	0.00	Evergreen	90	60	76.0	3.19
Junction City ¹	86	54	68.7	0.00	Florence ¹	96	68	82.3	2.57
Lafayette ¹	97	52	67.0	0.05	Green Pond ¹	95	65	80.6	2.97
Leland ¹	98	40	66.8	0.00	Greenville ¹	91	59	74.4	6.21
McMinnville b ¹	90	50	66.9	0.12	Hardeeville ¹	92	69	80.1	5.80
Monmouth ¹	94	47	65.5	0.00	Kingstree ¹	92	65	79.3	4.40
Portland ¹	90	45	67.0	0.08	Mount Carmel ¹	92	65	79.3	1.43
Riddles ¹	94	42	64.3	0.00	Nichols ¹	92	65	79.3	6.47
Roseburg ¹	93	53	66.2	0.00	Port Royal ¹	95	75	81.8	2.27
Salem a ¹	80	40	57.1	0.02	Saint Georges ¹	94	66	80.0	5.08
Sheridan ¹	92	52	68.7	0.02	Saint Matthews ¹	94	68	80.0	5.36
Silverton ¹	90	50	66.3	0.04	Saint Stephens ¹	94	68	80.0	5.05
Siskiyou ¹	88	45	65.9	0.00	Simpsonville ¹	92	66	77.3	3.75
Springfield ¹	82	49	68.8	0.00	Society Hill ¹	91	64	78.2	3.70
West Fork ¹	99	45	68.0	0.00	Spartanburg ¹	94	66	79.0	1.85
<i>Pennsylvania.</i>					Statesburg ¹	92	68	77.8	1.38
Altoona	94	55	74.4	2.26	Tillers Ferry ¹	92	68	77.8	3.20
Aqueduct ¹	102	57	73.9	3.65	Trials	95	66	76.5	3.57
Blooming Grove ¹	96	57	69.4	6.90	Wateree ¹	95	60	79.1	3.87
Blue Knob	92	51	68.6	3.83	Winnsboro ¹	95	60	79.1	3.42
Brookville ¹	96	51	73.9	1.74	Yorkville	92	64	78.6	3.01
Carlisle ¹	96	51	73.9	1.97	<i>South Dakota.</i>				
Clarion ¹	98	53	72.6	2.18	Aberdeen ¹	96	38	70.4	1.48
Coatesville ¹	98	53	72.6	2.37	Andersia ¹	102	37	71.6	1.65
Confluence ¹	90	58	71.3	2.54	Ashcroft ¹	98	53	71.9	2.99
Coopersburg ¹	90	58	71.3	4.05	Bowdle ¹	96	42	68.5	3.39
Corry ¹	92	44	65.0	7.64	Britton ¹	95	32	66.9	1.53
Davis Island Dam ¹	92	44	65.0	1.32	Brookings ¹	94	36	67.2	3.02

Received too late for publication in July, 1892.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
<i>Alabama.</i>	°	°	°	<i>Ins.</i>	<i>Kansas.</i>	°	°	°	<i>Ins.</i>
Tuscaloosa †.....	96	60	79.3	.....	Coldwater †.....	107	57	79.2	1.03
Uniontown.....	93	66	79.0	10.98	Mankato †.....	98	50	74.5	5.28
<i>California.</i>					<i>Kentucky.</i>				
Traver †.....	106	60	79.5	0.00	Williamsburg †.....	96	59	77.1	2.18
<i>Colorado.</i>					<i>Missouri.</i>				
Climax †.....	72	36	48.4	3.50	Booneville †.....				4.90
Del Norte †.....	88	38	63.7	1.62	<i>Nebraska.</i>				
Fort Collins †.....	93	45	68.2	1.32	Tekamah.....	102	49	74.6	4.90
Greeley †.....	96	51	72.8	0.96	<i>Ohio.</i>				
Kirk.....				6.58	Wooster †.....				4.73
Monte Vista a.....	88	39	63.3	2.73	<i>Texas.</i>				
Red Cliff.....				2.98	Fort Worth †.....	98	62	82.2	1.50
Villa Grove †.....				2.88	Rio Grande City †.....				1.41
<i>Georgia.</i>					<i>Utah.</i>				
Piscola.....				11.40	Beaver †.....	93	40	67.8	1.20
<i>Illinois.</i>					Logan.....	94 ^d	44 ^d	70.3 ^d	0.34
Aurora b.....				4.90	Losee †.....	94	44	70.6	0.50
<i>Iowa.</i>					Manti †.....	103	41	71.7	0.32
Sac City †.....	95	54	76.1	2.05					

*Extremes of temperature from observed readings of dry thermometer.

† Weather Bureau instruments.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

1 Mean of 7 a. m. + 2 p. m. + 9 p. m. + 4.

2 Mean of 8 a. m. + 8 p. m. + 2.

3 Mean of 7 a. m. + 7 p. m. + 2.

4 Mean of 6 a. m. + 6 p. m. + 2.

5 Mean of 7 a. m. + 2 p. m. + 2.

6 Mean from readings at various hours reduced to true daily mean by special tables.

7 Mean from hourly readings of thermograph.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An italic letter following the name of a station, as "Livingston a," "Livingston b," indicates that two or more observers, as the case may be, are reporting from the same station. A small Roman letter following the name of station indicates the number of days missing from the record, for instance, "a" denotes 14 days missing.

A small Roman letter in figure columns indicates the number of days missing from the record; example, "4" four days missing, etc.

Corrections: July, 1892, Missouri, Gordonville, make precipitation 3.47 instead of 3.87; Jefferson City, make precipitation 5.40 instead of 6.12. March, 1892, Ohio, Wooster, make precipitation 3.38 instead of 3.64.

NOTE.—The following changes have been made in names of stations: Arkansas, Lead Hill, changed to Keesees Ferry; California, Citrus, changed to Independence b; Georgia, Quitman a, changed to Piscola; New Mexico, Red Canyon, changed to Hills Ranch; Pennsylvania, Port Carbon, changed to Pottsville.

Data from Canadian stations for the month of August, 1892.

Station.	Pressure.			Temperature.		Precipitation.		Prevailing direction of wind.
	Mean not reduced.	Mean reduced.	Departure from normal.	Mean.	Departure from normal.	Total.	Departure from normal.	
	Inches.	Inches.	Inches.	°	°	Inches.	Inches.	
Saint John's, N. F.....	29.94	30.09	.....	57.6	+ 3.4	6.37	.....	S.
Sydney, C. B. I.....	29.96	30.02	+ .05	63.0	+ 1.0	6.72	+ 2.82	SW.
Anticosti Island.....	.....	.....	.....	.....	.....	.....	.....	.....
Halifax, N. S.....	29.90	30.03	+ .03	64.5	+ 1.5	6.80	+ 3.24	SW.
Grand Manan, N. B.....	29.94	29.99	.....	61.8	.....	3.87	+ 0.78	W.
Yarmouth, N. S.....	29.92	30.00	.....	61.8	+ 2.3	4.44	+ 1.22	SW.
Saint Andrews, N. B.....	29.92	29.97	.....	61.8	.....	5.20	+ 2.35	NE.
Charlottetown, P. E. I.....	29.96	30.00	.....	63.8	.....	8.44	+ 5.04	SW.
Chatham, N. B.....	29.97	29.99	+ .05	63.5	+ 2.5	7.24	+ 3.10	W.
Father Point, Que.....	29.96	29.99	+ .07	55.2	— 0.8	4.19	+ 1.63	W.
Quebec, Que.....	29.67	29.99	+ .04	61.8	— 1.2	3.18	— 0.24	NE.
Montreal, Que.....	29.78	29.98	+ .02	65.2	— 1.3	5.24	+ 3.07	SW.
Rockliffe, Ont.....	29.45	29.95	— .03	61.8	+ 1.8	3.01	+ 0.08	NW.
Kingston, Ont.....	29.66	29.97	— .01	67.2	+ 0.7	7.77	+ 5.78	N.
Toronto, Ont.....	29.62	29.99	— .01	66.9	+ 1.4	3.99	+ 1.41	N.
White River, Ont.....	28.68	30.00	.....	58.6	.....	3.33	.....	N.
Port Stanley, Ont.....	29.39	30.01	.....	66.4	.....	2.05	— 0.34	W.
Saugeen, Ont.....	29.31	30.01	+ .01	64.6	+ 2.1	3.76	+ 1.98	E.
Parry Sound, Ont.....	29.31	29.99	— .01	64.1	+ 2.1	4.76	+ 2.08	W.
Port Arthur, Ont.....	29.26	29.94	+ .02	61.2	+ 2.2	4.02	+ 1.65	N.
Winnipeg, Man.....	29.12	29.93	+ .01	63.4	+ 1.9	3.73	+ 0.27	S.
Minnedosa, Man.....	28.15	29.91	+ .02	60.2	+ 1.7	1.33	— 0.53	E.
Qu'Appelle, Assiniboia.....	27.70	29.89	— .01	61.3	+ 0.8	2.45	+ 0.98	N.
Medicine Hat, Assiniboia.....	27.64	29.87	— .03	64.3	— 1.2	3.00	+ 2.01	W.
Swift Current, Assiniboia.....	27.39	29.89	— .03	63.3	+ 0.8	1.76	+ 0.62	W.
Calgary, Alberta.....	26.46	29.92	+ .02	57.8	— 0.7	1.10	— 0.67	W.
Prince Albert, Saskatch'n.....	28.38	29.85	.....	59.3	.....	1.51	.....	W.
Esquimalt, B. C.....	.....	.....	.....	.....	.....	.....	.....	.....
Stony Mountain, Man.....	.....	.....	.....	.....	.....	.....	.....	.....
Spences Bridge, B. C.....	29.14	29.93	.....	68.6	.....	0.21	.....	W.
Sandy Point, N. F.....	.....	.....	.....	.....	.....	.....	.....	.....
Edmonton, Alberta.....	27.62	29.91	+ .03	57.2	— 0.4	2.83	+ 1.00	NW.
Battleford, Saskatchewan.....	.....	.....	.....	.....	.....	.....	.....	.....
Grindstone, Gulf St. L.....	29.94	29.97	.....	61.2	.....	9.27	.....	SW.
Hamilton, Bermuda.....	.....	.....	.....	.....	.....	.....	.....	.....

Table of miscellaneous meteorological data for August, 1892—Weather Bureau observations.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.		Temperature of the air, in degrees Fahrenheit.					Humidity and precipitation.					Wind.			Mean temperature data since opening of station.														
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Date.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with or more.	Total movement, miles.	Prevailing direction.	Maximum velocity.	Date.	Cloudless days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Highest for month.	Year.	Lowest for month.	Year.			
New England.																																
Eastport	53	20	29.93	29.99	+ .02	68.5	+ 1.4	84	17	69	50	55	65	88	4.91	+ 0.8	14	4,911	sw.	36	ne.	27	6	10	15	6.5	62.2	1883	59.1	1879		
Portland	103	21	29.89	29.99	+ .01	66.2	+ 1.2	84	9	73	46	47	60	88	8.14	+ 4.4	14	5,351	sw.	26	ne.	25	10	8	13	6.0	70.5	1876	64.1	1885		
Manchester	247	6	29.75	30.00	.....	68.2	.....	93	10	77	51	47	60	80	6.43	.....	12	2,750	nw.	18	nw.	12	10	9	12	5.8	68.2	1892	65.3	1887
Mount Washington	6,279	20	23.91	29.99	.....	48.0	.....	62	17	53	34	7	43	18	10.30	.....	20	15,230	w.	60	nw.	15	4	10	13	7.5	50.4	1872	43.0	1885
Northfield	872	6	29.09	30.01	.....	64.8	.....	89	10	75	43	29	55	34	6.50	.....	15	4,798	sw.	49	sw.	10	13	7	10	6.3	64.8	1892	61.0	1887
Boston	125	22	29.88	30.01	+ .02	70.2	+ 1.7	94	10	77	55	30	64	22	4.87	+ 0.4	6	7,427	sw.	36	ne.	26	9	12	10	5.3	72.4	1872	67.1	1887		
Nantucket	14	6	30.00	30.01	.....	68.7	.....	82	10	74	57	30	64	16	1.79	.....	6	7,171	sw.	38	ne.	26	12	6	13	5.8	68.8	1891	67.4	.....	
Woods Hole	15	6	.....	.....	.....	68.7	+ 0.2	82	10	74	57	30	64	15	2.45	+ 1.7	9	8,872	sw.	37	n.	27	9	8	14	6.5	70.0	1877	66.2	1874
Vineyard Haven	6	6	.....	.....	.....	73.0	.....	91	10	82	56	24	64	31	1.81	.....	7	.....	sw.	.....	.....	10	6	15	.....	73.0	1892	70.0	1889	
Block Island	27	12	29.99	30.02	+ .01	69.1	+ 1.0	85	10	74	57	28	65	16	5.71	+ 2.5	8	9,177	sw.	48	ne.	26	14	8	9	4.8	70.0	1884	67.2	.....	
Narragansett Pier	11	11	.....	.....	.....	71.0	+ 2.6	88	10	78	55	28	64	23	5.00	+ 1.3	8	.....	sw.	.....	.....	14	7	10	.....	71.0	.....	67.2	1885	
New Haven	107	20	29.88	29.99	.....	70.6	+ 2.1	89	10	79	55	28	62	26	4.99	+ 0.5	10	4,889	n.	36	nw.	9	11	10	10	5.3	74.1	1877	67.3	1883	
New London	47	22	29.94	30.00	.....	70.0	.....	84	10	76	55	28	64	21	4.45	+ 1.6	11	4,255	sw.	23	sw.	31	11	12	8	4.9	72.9	1877	67.5	1874
Mid. Atlantic States.																																
Albany	85	19	29.91	30.00	+ .01	71.5	+ 1.3	91	10	80	54	28	63	26	6.70	+ 2.9	15	4,516	sw.	26	w.	9	6	14	11	5.9	73.3	1881	66.8	1874		
New York, N. Y.	185	22	29.82	30.02	.....	73.9	+ 2.1	93	9	81	59	27	67	21	3.90	+ 0.8	12	5,164	nw.	28	ne.	26	9	15	7	5.3	75.0	1872	70.6	1874	
Harrisburg	377	5	29.62	30.02	.....	74.2	.....	93	9	83	58	29	65	26	3.50	w.	36	3,510	w.	36	w.	10	11	13	7	4.8	74.2	1892	69.8	1889
Philadelphia	117	22	29.90	30.02	.....	75.6	+ 2.1	96	10	84	61	27	68	23	2.74	+ 2.1	9	5,974	nw.	24	ne.	26	11	11	9	5.1	76.9	1871	71.3	1874	
Atlantic City	53	19	29.97	30.02	+ .01	73.6	+ 2.8	86	9	79	61	28	68	23	3.26	+ 1.5	11	6,418	sw.	26	nw.	21	11	12	8	4.7	74.8	1877	69.3	1889		
New Brunswick	.....	.....	.....	.....	.....	73.4	.....	94	9	83	58	28	64	28	3.38	.....	11	.....	sw.	.....	.....	3	22	6	.....	.....	.....	.....	.....	.....
Baltimore	179	22	29.82	30.01	.....	76.2	+ 1.7	95	10	84	60	29	68	22	1.83	+ 2.6	10	4,536	nw.	35	nw.	10	11	16	4	4.5	79.5	1872	72.6	1874	
Washington, D. C.	112	22	29.91	30.02	.....	76.2	+ 2.7	95	10	86	60	15	67	27	0.85	+ 3.6	5	3,616	nw.	18	nw.	12	18	10	3	3.5	79.0	1872	71.6	1874	
Cape Henry	.....	.....	.....	.....	.....	77.7	+ 1.3	94	9	84	66	15	71	30	7.81	+ 2.0	11	.....	sw.	.....	.....	14	10	7	.....	78.8	1888	74.1	.....		
Lynchburg	685	22	29.32	30.03	.....	77.5	+ 3.0	95	9	88	60	13	67	28	0.86	+ 3.2	8	2,497	sw.	24	n.	20	12	17	2	4.0	80.2	1881	72.0	1874	
Norfolk	57	22	29.97	30.03	+ .01	79.2	+ 3.4	94	11	87	66	15	71	21	3.65	+ 2.8	10	4,470	sw.	26	nw.	3	18	8	5	3.6	79.5	1872	73.3	1874		
S. Atlantic States.																																
Charlotte	773	14	29.24	30.03	+ .01	77.9	+ 1.4	92	11	88	62	14	68	29	2.31	+ 3.0	6	3,252	ne.	24	se.	1	9	14	8	5.0	80.9	1881	73.6	1879		
Hatteras	11	12	30.04	30.03	+ .03	79.0	+ 1.8	86	11	83	71	13	75	12	2.48	+ 3.9	13	7,208	sw.	36	nw.	27	12	16	3	4.4	79.0	1892	75.5	1886		
Kittyhawk	9	18	30.00	30.01	.....	79.6	+ 2.2	93	11	85	69	14	74	17	2.43	+ 3.4	15	7,725	sw.	35	ne.	23	10	14	7	5.0	83.7	1885	74.9	1886	
Raleigh	386	6	29.62	30.03	.....	78.7	.....	94	11	89	63	14	69	26	4.42	.....	9	2,520	sw.	20	ne.	7	10	13	8	5.5	78.7	1892	73.4	1889
Southport	34	16	30.01	30.04	.....	78.2	+ 0.3	87	11	84	60	20	72	34	1.91	+ 4.0	10	2,820	sw.	30	sw.	23	13	13	5	4.1	81.0	1876	76.2	1889	
Wilmington	78	22	29.97	30.05	+ .03	79.5	+ 1.7	93	11	87	66	16	72	20	4.35	+ 3.2	12	4,881	sw.	22	sw.	25	8	17	6	5.3	80.9	1872	76.0	1889		
Charleston	52	22	29.01	30.06	+ .04	81.5	+ 1.7	94	11	88	66	19	70	25	4.73	+ 3.6	10	5,416	sw.	30	nw.	12	1	27	3	5.6	82.9	1892	76.5	1889		
Columbia	.....	.....	.....	.....	.....	80.4	.....	96	11	90	66	19	70	25	9.72	.....	15	.....	sw.	.....	.....	10	14	7	.....	80.4	1892	76.1	1875	
Augusta	209	21	29.85	30.07	+ .04	80.1	+ 0.1	96	11	89	68	19	71	24	2.46	+ 2.3	13	2,145	w.	26	w.	26	12	12	7	4.8	83.7	1878	76.1	1875		
Savannah	67	22	29.97	30.07	+ .03	81.2	+ 1.4	96	11	90	68	19	71	24	3.35	+ 4.1	19	4,643	sw.	26	e.	15	0	25	6	6.0	84.7	1878	77.8	1889		
Jacksonville	43	21	29.02	30.07	+ .05	81.4	+ 1.4	96	11	91	68	19	72	26	4.84	+ 4.8	20	4,237	sw.	31	sw.	6	0	19	12	6.9	82.8	1878	78.8	1874		
Florida Peninsula.																																
Jupiter	28	5	30.03	30.06	.....	80.7	.....	90	11	88	70	23	74	18	2.80	.....	8	4,715	sw.	21	ne.	19	19	10	2	3.5	81.9	1885	79.9	1889
Key West	22	22	30.04	30.06	+ .05	83.4	+ 0.7	90	11	88	72	11	79	15	1.59	+ 3.2	10	4,670	sw.	26	sw.	6	4	20	7	6.0	85.6	1878	81.2	1889		
Mico	.....	.....	.....	.....	.....	82.8	.....	101	12	94	68	17	72	28	2.03	.....	10	.....	sw.	.....	.....	3	19	8	.....	.....	.....	.....	.....	.....
Tampa	36	.....	30.03	30.07	.....	81.4	.....	94	11	90	70	4	73	22	5.60	.....	21	2,903	e.	33	e.	9	1	21	9	6.2	.....	.....	.....	.....
Titusville	44	6	30.03	30.07	.....	80.2	.....	92	12	88	68	27	72	31	6.070	.....	11	6,070	sw.	44	sw.	5	10	19	2	4.2	81.8	1891	79.4	1889
Eastern Gulf States.																																
Atlanta	1,131	14	28.89	30.05	+ .01	76.2	+ 0.3	91	5	84	62	17	68	24	6.66	+ 2.1	15	5,041	sw.	35	w.	25	8	8	15	6.3	78.5	1888	73.4	1879		
Pensacola	56	13	29.90	30.02	+ .01	80.2	+ 0.5	89	10	86	68	31	74	20	8.74	+ 0.1	14	5,203	sw.	52	sw.	17	7	15	9	5.8	81.6	1887	78.8	1882		
Auburn	.....	.....	.....	.....	.....	77.2	+ 0.5	89	10	86	68	31	74	20	5.13	.....	10	.....	sw.	.....	.....	4	14	13	.....	78.9	1886	75.0	1882	
Mobile	35	22	29.98	30.02	+ .01	79.8	+ 0.7	92	10	87	68	4	72	23	74	87	13.47	+ 6.7	27	3,849	sw.	36	sw.	29	0	21	10	6.2	83.7	1874	78.2	1879
Montgomery	357	20	29.76	30.02	+ .01	79.9	+ 0.1	94	5	89	68	5	71	26	73	86	7.82	+ 4.0	17	3,354	e.	30	nw.	26								

Table of miscellaneous meteorological data for August, 1892—Weather Bureau observations—Continued.

Districts and stations.	Elevation above level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.						Humidity and precipitation.				Wind.				Cloudless days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.								
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01 or more.					Total movement, miles.	Prevailing direction.	Maximum velocity.	Date	Year.	Lowest for month.	Year.		
Gr. Northwest—Con.																																
Bismarck	1,698	18	28.16	29.92	-.00	68.5	+0.6	98	4	82	41	30	55	37	55	69	2.40	+0.2	10	6,247	se.	36	nw.	27	13	11	5	3.9	71.3	1878	62.3	1885
Fort Buford	1,899	14	27.93	29.89	-.01	67.2	+0.3	100	1	82	41	30	53	45	49	59	0.62	-0.7	8	5,422	e.	42	n.	17	13	12	6	4.5	70.8	1882	61.9	1885
Upper Miss. Valley.																																
Minneapolis	758	20	29.20	29.99	-.00	69.8	+0.8	87	15	80	46	31	60	24	61	76	4.71	-0.7	9	5,537	se.	34	sw.	5	14	13	10	4.3	70.8	1881	65.0	1885
Red Wing	850	22	29.12	30.01	+.04	69.4	+0.9	87	16	79	44	31	60	26	61	72	3.66	+0.2	8	4,167	se.	42	nw.	8	10	12	9	4.9	72.9	1881	65.8	1885
Saint Paul	720	20	29.27	30.02	+.04	70.7	+2.2	92	8	80	49	20	61	29	60	75	1.88	-1.9	8	3,590	se.	24	sw.	9	13	15	3	4.5	74.1	1881	68.0	1885
Davenport	613	21	29.39	30.03	+.03	73.4	+2.1	93	8	83	48	31	63	26	61	71	1.53	-2.2	8	5,277	se.	28	w.	30	12	16	3	4.3	78.1	1873	68.0	1885
Des Moines	869	15	29.10	30.01	+.03	72.2	+0.2	95	8	82	47	30	62	30	61	72	2.45	-1.0	8	3,726	ne.	34	w.	8	13	10	8	4.3	78.1	1878	68.7	1884
Dubuque	651	20	29.33	30.01	+.01	72.6	+2.3	94	8	82	47	31	63	25	64	79	2.51	-1.0	6	2,843	nw.	45	ne.	9	11	15	5	4.6	74.2	1881	66.4	1885
Keokuk	613	22	29.37	30.01	+.02	74.9	+1.6	95	5	85	51	31	65	25	64	73	1.07	-1.9	5	3,486	n.	22	nw.	30	20	8	3	2.8	79.2	1881	70.0	1885
Cairo	359	22	29.65	30.02	+.03	76.2	+0.3	93	23	84	57	31	68	25	69	83	5.23	+2.4	14	4,516	se.	38	w.	24	9	17	5	4.9	82.8	1881	73.6	1875
Springfield, Ill.	644	14	29.34	30.01	-.01	74.4	+1.7	95	8	85	52	31	64	30	62	72	1.89	-0.5	7	2,516	ne.	25	sw.	29	16	11	4	3.9	78.5	1881	70.5	1883
Hannibal	534	22	29.45	30.01	+.01	75.3	+0.3	95	6	86	50	31	65	28	63	70	0.92	-0.8	4	4,865	ne.	24	sw.	8	19	8	3	4.3	78.5	1881	70.5	1883
Saint Louis	571	22	29.41	30.00	+.01	75.2	+1.5	97	8	86	58	31	69	27	64	67	1.75	-0.8	7	6,050	ne.	32	sw.	9	22	6	3	2.9	82.5	1881	72.8	1883
Missouri Valley.																																
Columbia	963	5	29.01	30.00	-.01	74.7	...	96	5	86	47	31	64	34	64	69	3.59	-0.7	7	3,347	se.	25	w.	22	21	7	3	2.6	76.6	1892	73.5	1891
Kansas City	1,356	6	28.62	30.01	+.01	75.8	+1.5	95	5	86	50	31	66	28	64	75	1.55	-1.1	11	5,021	e.	45	sw.	25	14	15	2	3.5	75.8	1892	72.5	1884
Springfield, Mo.	857	22	29.12	30.01	+.02	76.2	+1.5	98	5	87	51	30	65	28	63	70	3.54	-0.5	8	4,440	e.	42	sw.	9	12	14	5	4.8	81.7	1881	71.8	1884
Leavenworth	998	6	28.86	30.00	+.01	76.0	...	98	5	87	51	30	65	28	62	72	4.14	-0.5	8	4,440	e.	42	sw.	9	12	14	5	4.8	81.7	1881	71.8	1884
Topeka	1,113	22	28.86	30.00	+.01	73.4	+0.9	100	8	83	49	30	64	24	62	72	2.50	-0.9	7	4,341	se.	30	ne.	13	8	17	6	5.1	80.2	1881	69.9	1885
Omaha	998	6	28.86	30.00	+.01	73.6	...	98	8	85	47	30	62	32	57	68	2.36	-0.9	5	5,000	se.	48	se.	10	13	14	2	4.9	73.0	1889	71.4	1887
Crete	2,613	7	27.31	29.95	-.02	72.4	+3.4	102	8	85	39	30	60	41	57	68	4.82	+3.4	16	7,031	se.	48	se.	10	13	14	4	4.9	73.0	1889	67.3	1887
Valentine	1,165	22	28.77	29.97	-.02	71.8	...	95	8	82	46	30	62	28	61	75	4.14	-0.9	9	6,809	se.	52	n.	13	13	11	7	4.6	70.8	1881	64.0	1885
Sioux City	1,470	22	28.77	29.97	-.02	71.8	...	95	16	86	46	30	62	28	61	75	4.14	-0.9	9	6,809	se.	52	n.	13	13	11	7	4.6	70.8	1881	64.0	1885
Pierre	1,310	22	28.77	29.97	-.02	71.8	...	95	16	86	46	30	62	28	61	75	4.14	-0.9	9	6,809	se.	52	n.	13	13	11	7	4.6	70.8	1881	64.0	1885
Huron	1,310	22	28.77	29.97	-.02	71.8	...	95	16	86	46	30	62	28	61	75	4.14	-0.9	9	6,809	se.	52	n.	13	13	11	7	4.6	70.8	1881	64.0	1885
Yankton	1,232	19	28.70	29.97	+.02	72.3	+0.3	98	2	83	47	30	62	36	60	73	4.24	+1.1	12	5,554	se.	52	ne.	14	10	10	5	4.4	77.4	1881	67.2	1885
Northern Slope.																																
Havre	2,477	13	27.35	29.89	-.02	65.4	-0.9	98	14	82	47	30	62	36	45	57	1.09	-0.5	4	5,381	sw.	40	sw.	11	11	19	1	3.9	70.8	1882	62.4	1880
Miles City	2,374	13	27.35	29.89	-.02	65.4	-0.9	98	14	82	47	30	62	36	45	57	1.09	-0.5	4	5,381	sw.	40	sw.	11	11	19	1	3.9	70.8	1882	62.4	1880
Helena	4,118	13	27.35	29.89	-.02	65.4	-0.9	98	14	82	47	30	62	36	45	57	1.09	-0.5	4	5,381	sw.	40	sw.	11	11	19	1	3.9	70.8	1882	62.4	1880
Rapid City	3,280	7	26.64	29.90	-.01	71.0	+0.5	102	15	83	46	24	59	43	50	54	2.00	-1.0	11	6,140	sw.	36	nw.	17	13	12	6	4.7	73.4	1881	66.2	1888
Cheyenne	6,105	22	24.14	29.92	+.01	66.0	+1.0	93	14	81	30	29	51	41	47	59	0.60	-1.0	6	4,780	nw.	30	w.	27	14	12	2	3.9	68.1	1889	61.1	1884
Lander	5,377	22	24.72	29.96	+.01	64.0	...	93	15	83	33	29	46	48	38	45	0.86	-0.8	3	3,259	sw.	39	sw.	11	17	12	2	3.0	70.8	1881	64.0	1885
Kearney	2,173	22	27.72	29.92	+.02	73.0	...	96	5	85	45	30	61	36	60	68	3.08	-0.8	8	7,168	se.	46	se.	28	17	12	2	3.3	70.8	1881	64.0	1885
North Platte	2,841	18	27.11	29.97	+.01	71.8	+1.8	100	2	86	42	30	58	41	59	72	2.77	+0.5	8	6,502	se.	34	w.	27	11	16	4	4.4	77.4	1881	67.2	1885
Middle Slope.																																
Denver	5,287	21	24.85	29.94	+.05	71.4	+1.9	98	14	86	45	30	57	38	40	41	0.58	-1.0	5	4,885	se.	28	nw.	17	8	21	2	4.3	72.8	1889	68.0	1884
Pikes Peak	14,095	16	24.85	29.94	+.05	71.4	+1.9	98	14	86	45	30	57	38	40	41	0.58	-1.0	5	4,885	se.	28	nw.	17	8	21	2	4.3	72.8	1889	68.0	1884
Pueblo	4,734	5	25.33	29.95	+.05	73.4	+2.0	101	3	88	45	30	57	44	42	45	1.57	-1.0	6	5,062	nw.	44	nw.	5	12	18	1	4.1	75.8	1889	71.1	1888
Concordia	1,410	8	28.54	29.97	+.07	75.7	+2.0	101	3	88	45	30	57	44	42	45	3.04	-1.0	6	4,316	se.	40	ne.	13	19	9	3	2.9	75.9	1886	71.1	1885
Dodge City	2,523	18	27.41	29.95	+.00	76.0	+0.7	103	5	90	48	29	62	38	57	63	4.09	+1.6	8	7,660	se.	50	ne.	1								

STATIONS OF THE WEATHER BUREAU.

Station.	Observer.	Station.	Observer.	Station.	Observer.
First Order.*					
Abilene, Tex.	Allen Buell.	Little Rock, Ark.	F. H. Clarke.	Columbia, Tex.	J. F. Rogers.
Albany, N. Y.	A. F. Sims.	Los Angeles, Cal.	Geo. E. Franklin.	Corsicana, Tex.	E. L. Gibson.
Alpena, Mich.	H. McP. Baldwin.	Louisville, Ky.	Frank Burke.	Cuero, Tex.	Dr. J. M. Reuss.
Atlanta, Ga.	Park Morrill.	Manchester, N. H.	J. H. Melton.	Dallas, Tex.	H. P. Berry.
Augusta, Ga.	David Fisher.	Meridian, Miss.	Geo. Hass Hagen.	Hearne, Tex.	W. A. Snell.
Bismarck, N. Dak.	Wm. H. Fallon.	Miles City, Mont.	H. R. Boynton.	Houston, Tex.	D. R. Saunders.
Boston, Mass.	J. W. Smith.	Mobile, Ala.	Jas. A. Barry.	Huntsville, Tex.	W. Y. Barr.
Buffalo, N. Y.	D. Cuthbertson.	Montgomery, Ala.	Arthur E. Hackett.	Luling, Tex.	J. E. Fisher.
Chicago, Ill.	Dr. H. C. Frankensfield.	Montrose, Colo.	P. J. Bolton.	Longview, Tex.	G. W. Crech.
Cincinnati, Ohio.	Presley T. Jenkins.	Mount Washington, N. H.	W. G. Mitchell.	Orange, Tex.	J. H. Kelly.
Cleveland, Ohio.	W. B. Stockman.	New Haven, Conn.	H. J. Cox.	Tyler, Tex.	W. A. Hartel.
Columbus, Ohio.	C. M. Strong.	New London, Conn.	R. O. Lazenby.	Waco, Tex.	W. H. Godber.
Davenport, Iowa.	F. J. Walls.	Northfield, Vt.	Wm. Line.	Weatherford, Tex.	W. B. Slack.
Denver, Colo.	J. J. Gilligan.	North Platte, Nebr.	J. C. Piercy.	Little Rock, Ark. (center).	
Des Moines, Iowa.	Dr. Geo. M. Chappell.	Okahoma, Okla. T.	Jas. I. Widmeyer.	Brinkley, Ark.	A. J. Hahn.
Detroit, Mich.	E. A. Evans.	Oswego, N. Y.	J. G. Linsley.	Forrest, Ark.	J. H. Bard.
Dodge City, Kansas.	Geo. T. Todd.	Palestine, Tex.	M. H. Perry.	Holena, Ark.	A. J. Goshen.
Duluth, Minn.	B. H. Bronson.	Parkersburg, W. Va.	W. W. Dent.	Malvern, Ark.	Jos. Coffin.
Eastport, Me.	D. C. Murphy.	Pensacola, Fla.	C. A. Smith.	Newport, Ark.	R. C. McMann.
El Paso, Tex.	N. D. Lane.	Pierre, S. Dak.	W. A. Shaw.	Paris, Tex.	C. E. Thorne.
Galveston, Tex.	Dr. I. M. Cline.	Point Barrow, Alaska.	Capt. G. B. Borden.	Pine Bluff, Ark.	J. E. O'Connor.
Havre, Mont.	Chas. W. Ling.	Port Angeles, Wash.	Wm. Bell.	Prescott, Ark.	Wm. Friganza.
Helena, Mont.	E. J. Glass.	Port Huron, Mich.	Wm. M. Edmondson.	Russellville, Ark.	O. M. Ellsworth.
Huron, S. Dak.	S. W. Glenn.	Portland, Me.	E. P. Jones.	Texarkana, Ark.	M. J. Nash.
Indianapolis, Ind.	C. F. R. Wappenhans.	Pueblo, Colo.	E. H. Brandenburg.	Memphis, Tenn. (center).	
Jacksonville, Fla.	E. R. Demain.	Raleigh, N. C.	C. F. von Herrmann.	Arlington, Tenn.	A. T. B. Etheridge.
Kansas City, Mo.	P. Connor.	Rapid City, S. Dak.	Wm. Norrington.	Batesville, Miss.	J. M. Cox.
Keeler, Cal.	H. E. Wilkinson.	Red Bluff, Cal.	John J. McLean.	Bolivar, Tenn.	W. F. McCarley.
Key West, Fla.	Henry Pennywitt.	Red Wing, Minn.	F. T. Williams.	Brownsville, Tenn.	W. A. Roberts.
Knoxville, Tenn.	J. N. Ryker.	Sacramento, Cal.	J. A. Barwick.	Corinth, Miss.	O. W. Henson.
Lynchburg, Va.	Louis Dorman.	Saint Vincent, Minn.	J. W. Grasse.	Covington, Tenn.	W. N. White.
Manistee, Mich.	P. McDonough.	San Antonio, Tex.	F. P. Passalunig.	Decatur, Ala.	J. M. Vickray.
Marquette, Mich.	W. M. Wilson.	Sandusky, Ohio.	B. F. Hough.	Dyersburg, Tenn.	J. F. Picketts.
Memphis, Tenn.	Willis L. Moore.	Shreveport, La.	G. B. Wurtz.	Hernando, Miss.	L. B. Jones.
Milwaukee, Wis.	S. G. Duffey.	Sioux City, Iowa.	U. G. Purcell.	Holly Springs, Miss.	N. T. Bryant.
Moorhead, Minn.	B. A. Blundon.	Southport, N. C.	S. L. Dasher.	Milan, Tenn.	O. F. Cantwell.
Nantucket, Mass.	J. E. Marbury.	Springfield, Ill.	John Craig.	Tusculum, Ala.	John Lasseter.
Nashville, Tenn.	Geo. E. Hunt.	Springfield, Mo.	T. S. Collins.	Mobile, Ala. (center).	
New Orleans, La.	E. B. Dunn.	Stanton, Port, N. Mex.	Mrs. M. H. Bailey.	Aberdeen, Miss.	O. L. McKay.
New York City.	A. J. Davis.	Tatoosh Island, Wash.	Frank R. Beahan.	Columbus, Miss.	W. P. Hopkins.
Norfolk, Va.	E. B. Olney.	Titusville, Fla.	Jos. E. Lanouette.	Evergreen, Ala.	J. C. Middlebrooks.
Olympia, Wash.	S. S. Bassler.	Tucson, Ariz.	Julius C. Hayden.	Livingston, Ala.	L. J. Marby.
Omaha, Neb.	L. M. Dey.	Valentine, Neb.	John Fitzgerald.	Macon, Miss.	B. J. Allen.
Philadelphia, Pa.	O. D. Stewart.	Walla Walla, Wash.	Fitzhugh Newman.	Okolona, Miss.	S. J. Russell.
Pittsburg, Pa.	B. S. Pague.	Wichita, Kans.	Dr. Fred. L. Johnson.	Thomasville, Ala.	J. N. Cammack.
Portland, Oregon.	A. L. White.	Winnemucca, Nev.	Geo. D. Boucher.	Waynesboro, Miss.	W. R. McKinley.
Rooster, N. Y.	Thos. Gibson.	Woods Holl, Mass.	J. P. Slaughter.	Montgomery, Ala. (center).	
Roseburg, Oregon.	W. H. Hammon.	Yankton, S. Dak.	Geo. W. Scott.	Eufaula, Ala.	O. T. Moore.
Saint Louis, Mo.	P. F. Lyons.	Third Order.†		Fort Deposit, Ala.	W. L. Van Pelt.
Saint Paul, Minn.	Geo. N. Salisbury.	Astoria, Oregon.	John Grover.	Marion, Ala.	Ira J. Davis.
Salt Lake City, Utah.	M. L. Hearne.	Auburn, Ala.	Prof. P. H. Mell.	Opelika, Ala.	W. L. Carmack.
San Diego, Cal.	S. H. Willson.	Cape Henry, Va.	J. P. Sherry.	Pine Apple, Ala.	J. B. Raab.
San Francisco, Cal.	H. B. Hersey.	Clallam Bay, Wash.	R. S. Dimmick.	Union Springs, Ala.	T. P. Wade.
Sault Ste. Marie, Mich.	C. L. Bossell.	Columbia, Mo.	A. P. Butler.	New Orleans, La. (center).	
Savannah, Ga.	P. H. Smyth.	Columbia, S. C.	G. A. Loveland.	Alexandria City, La.	L. C. Giff.
Spokane, Wash.	Chas. Stewart.	Crete, Neb.	John D. Blagden.	Amite, La.	G. E. Manard.
Tampa, Fla.	Thomas J. Considine.	Currituck Inlet, N. C.	J. C. Morrell.	Brookhaven, Miss.	E. M. Bee.
Toledo, Ohio.	E. A. Hanner.	Escanaba, Mich.	R. M. Hardinge.	Cheyneville, La.	W. W. Wall.
Vicksburg, Miss.	Wm. E. Butler.	Ithaca, N. Y.	Hal. P. Hardin.	Coushatta, La.	L. M. Howard.
Washington, D. C.	S. W. Beall.	Mico, Fla.	John H. Harmon.	Hazlehurst, Miss.	B. Fugate.
Wilmington, N. C.	F. P. Chaffee.	Minneapolis, Minn.	Mrs. M. E. Conway.	Lafayette, La.	J. J. Davidson.
Yuma, Ariz.	O. T. Stacy.	Narragansett Pier, R. I.	Charles Adie.	Minden, La.	W. S. Hunter.
Second Order.‡		Neah Bay, Wash.	E. W. McGinnis.	Natchez, Miss.	C. Steutenroth.
Amarillo, Tex.	Wayland Bailey.	New Brunswick, N. J.	J. M. Klein.	Natchitoches, La.	J. H. Cosgrove.
Atlantic City, N. J.	Wm. T. Blythe.	Point Reyes Light, Cal.	O. M. Hart.	Port Gibson, Miss.	H. H. Crisler.
Baker City, Oregon.	C. H. Stuller.	Port Crescent, Wash.	Homer Irvine.	Savannah, Ga. (center).	
Baltimore, Md.	Dr. C. P. Cronk.	Pysht, Wash.	T. B. Jennings.	Albany, Ga.	J. S. Clark.
Block Island, R. I.	Wm. Davis.	Topeka, Kans.	Prof. R. B. Fulton.	Alapaha, Ga.	C. I. Jones.
Buford, Fort, N. Dak.	E. L. Douglas.	Vineyard Haven, Mass.	W. W. Neifert.	Americus, Ga.	J. E. Peacock.
Chicago, Ill.	J. W. Byram.	Special Cotton Region Stations.‡		Bainbridge, Ga.	A. M. Jones.
Canby, Fort, Wash.	E. H. Thompson.	Atlanta, Ga. (center).		Cordele, Ga.	C. H. Peacock.
Carson City, Nev.	For A. Carpenter.	Columbus, Ga.	J. W. Long.	Eastman, Ga.	S. E. Lewis.
Charleston, S. C.	L. N. Jesunofsky.	Gainesville, Ga.	R. T. Murphy.	Fort Gaines, Ga.	James Bell.
Charlotte, N. C.	I. G. Gardiner.	Greenville, S. C.	Mrs. S. A. Crittenden.	Gainesville, Fla.	J. R. Sheppard.
Chattanooga, Tenn.	L. M. Pindell.	Griffin, Ga.	P. H. McDowell.	Millen, Ga.	A. W. Thomas.
Cheboygan, Mich.	J. H. Clery.	Macon, Ga.	W. M. Craven.	Quitman, Ga.	Robt. Thomas, Jr.
Cheyenne, Wyo.	E. M. Ravenscraft.	Newnan, Ga.	Nora M. Avery.	Thomasville, Ga.	W. P. Whelphy.
Concordia, Kans.	L. M. Tarr.	Spartanburg, S. C.	F. P. Robinson.	Way Cross, Ga.	
Corpus Christi, Tex.	George Reeder.	Toccoa, Ga.	J. K. Dickson.	Vicksburg, Miss. (center).	
Dubuque, Iowa.	S. C. Emery.	West Point, Ga.	J. A. Erwin.	Jackson, Miss.	H. S. Wright.
Eric, Pa.	Peter Wood.	Augusta, Ga. (center).		Lake, Miss.	W. A. Gilmore.
Eureka, Cal.	Maurice Connell.	Allendale, S. C.	C. B. Farmer.	Monroe, La.	W. W. Renwick.
Fort Smith, Ark.	R. Q. Grant.	Athens, Ga.	W. P. Briggs.	Wilmington, N. C. (center).	
Fresno City, Cal.	J. R. Williams.	Batesburg, S. C.	D. P. Hartley.	Cheraw, S. C.	W. R. Godfrey.
Grand Haven, Mich.	Geo. W. Felger.	Blackville, S. C.	S. S. Turner.	Florence, S. C.	P. H. Walsh.
Green Bay, Wis.	F. W. Conrad.	Camak, Ga.	J. A. Chapman.	Goldsboro, N. C.	Mrs. N. B. Thomas.
Hannibal, Mo.	Dr. Robert J. Hyatt.	Greenwood, S. C.	W. D. Vance.	Greensboro, N. C.	G. W. Pritchett.
Harrisburg, Pa.	Frank Ridgway.	Union Point, Ga.	R. F. Bryan.	Lumberton, N. C.	B. M. Davis.
Hatteras, N. C.	H. B. Dick.	Washington, Ga.	Miss I. D. Smith.	Newbern, N. C.	W. G. Boyd.
Idaho Falls, Idaho.	James H. Smith.	Waynesboro, Ga.	H. W. Blount.	Weldon, N. C.	T. A. Clarke.
Jupiter, Fla.	A. J. Mitchell.	Charleston, S. C. (center).		Sugar and Rice Stations.‡	
Kearney, Nebr.	F. Z. Gosewisch.	Green Pond, S. C.	E. B. Strobel.	New Orleans, La. (center).	
Keokuk, Iowa.	Walter H. Scholl.	Hardeeville, S. C.	W. J. Evans.	Baton Rouge, La.	H. A. Morgan.
Kittyhawk, N. C.	W. U. Simons.	Kingsree, S. C.	T. F. Willis.	Covington, La.	H. H. Smith.
La Crosse, Wis.	R. M. Crawford.	St. Georges, S. C.	W. G. Sease.	Donaldsonville, La.	W. D. Park.
Lander, Wyo.	L. A. Welsh.	St. Matthews, S. C.	J. S. Wannamaker.	Franklin, La.	E. M. Cornay.
Leavenworth, Kans.	V. E. Muncy.	Galveston, Tex. (center).		Lake Charles, La.	Wm. Meyer.
Lexington, Ky.		Belton, Tex.	A. J. Embree.	Opelousas, La.	E. J. Clements.
		Brenham, Tex.	J. G. Sloan.	Rayne, La.	I. A. Smith.
				Schriever, La.	John T. Moore.

* Take two observations daily, and also record continuously important meteorological phenomena, such as wind-direction and velocity, precipitation, temperature, barometric pressure, etc., by means of self-registering instruments. † Take two observations daily. ‡ Take one observation, in addition to other special duties. § Take one observation daily from April 15 to November 30 each year, and telegraph it to district centers (regular Weather Bureau stations).

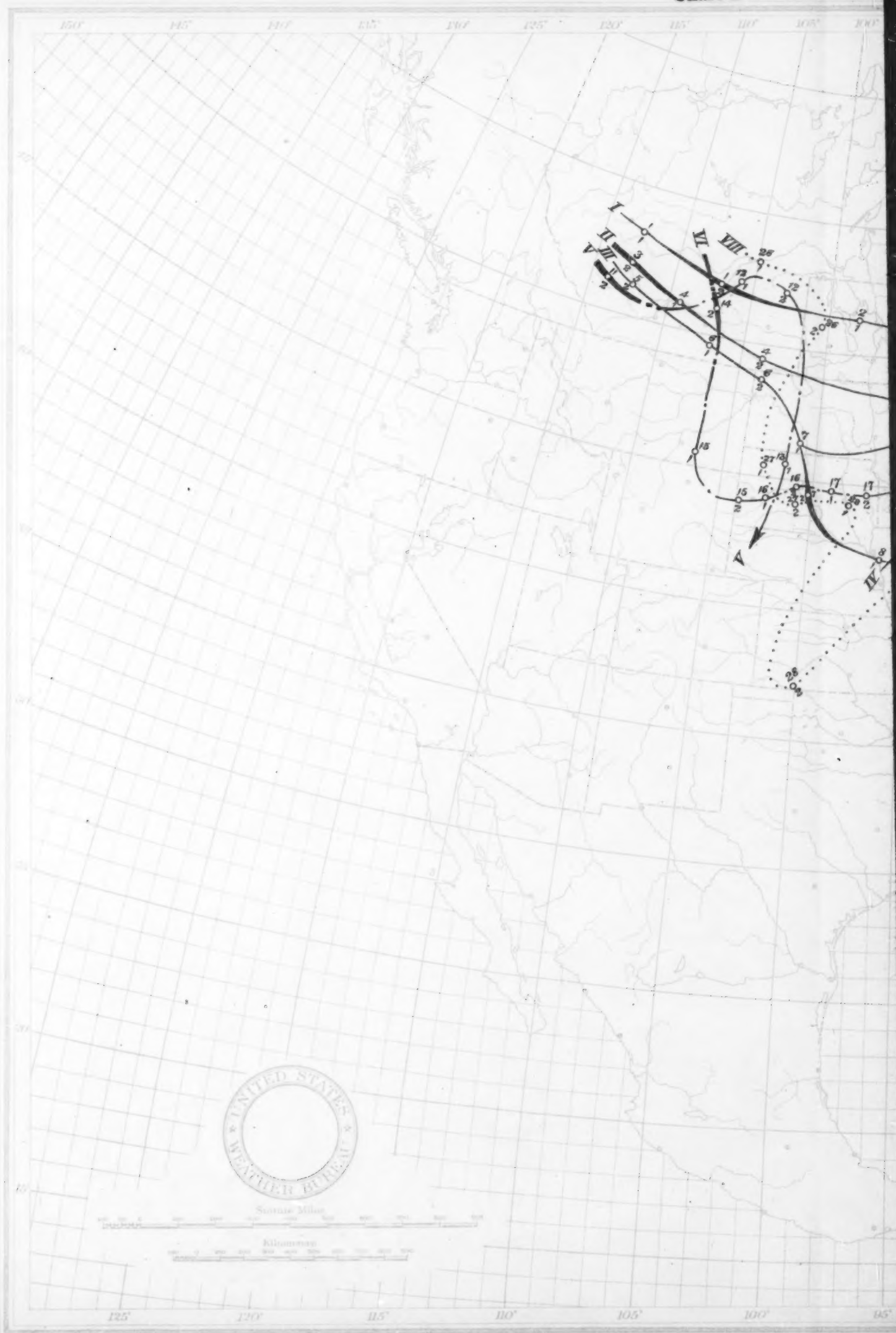


Chart I. Tracks of areas of Low Pressure. August, 1892.



The Roman figures above the lines indicate, respectively, the number of days the low pressure was displayed.

The dotted lines represent the tracks of the low pressure areas.

The ruled lines represent the tracks of the low pressure areas, and the small circles indicate the positions of the icebergs.



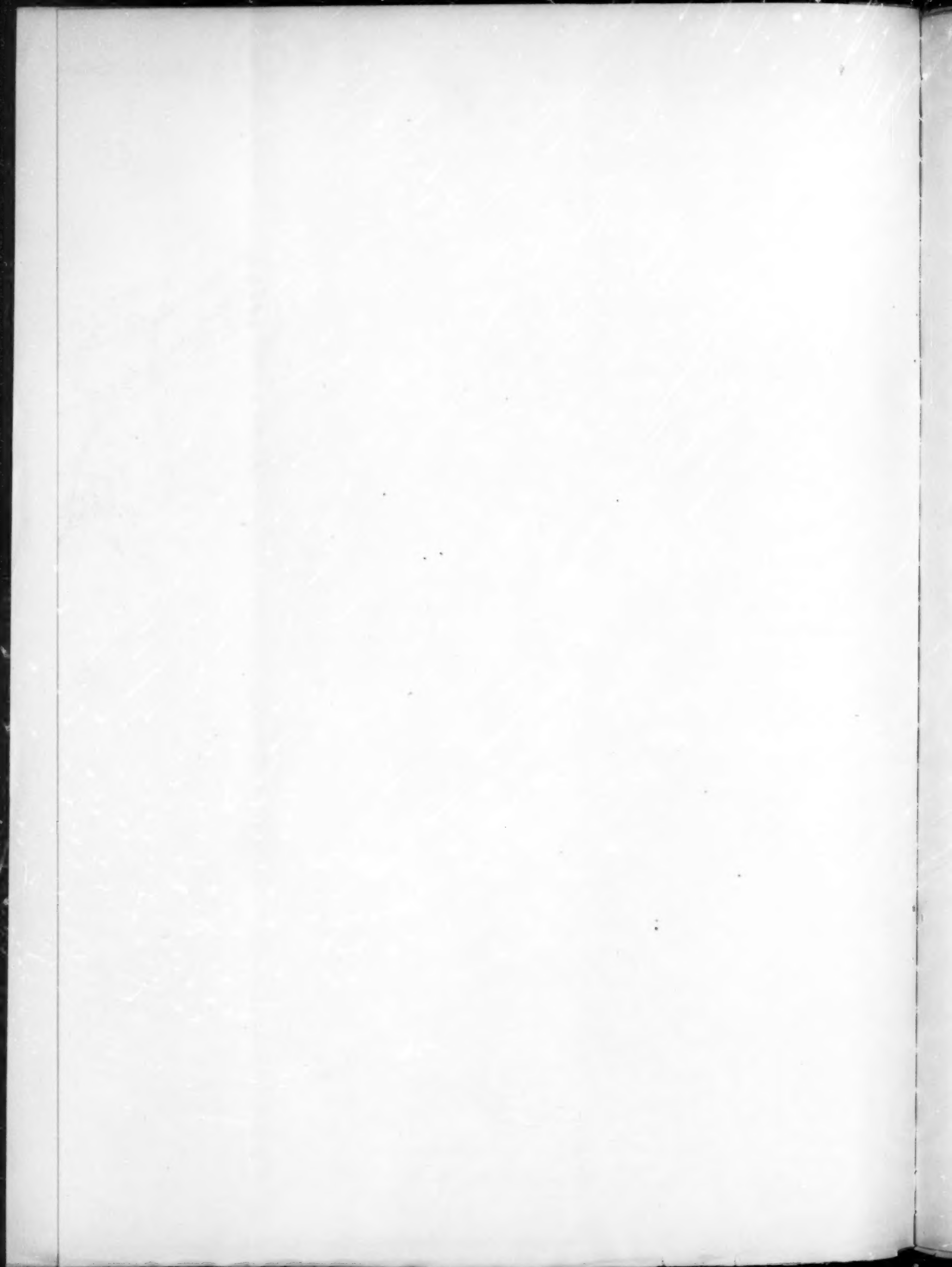
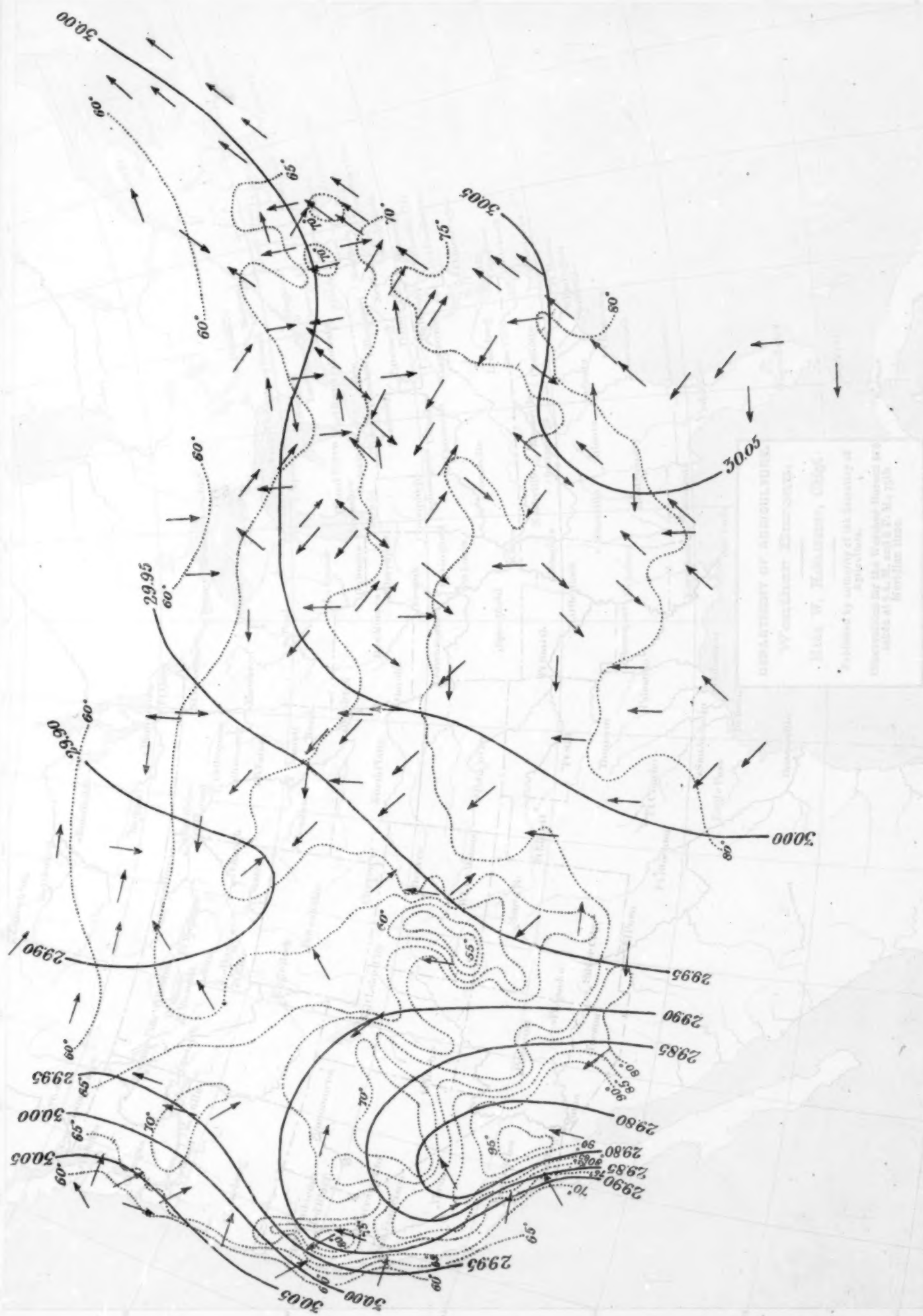
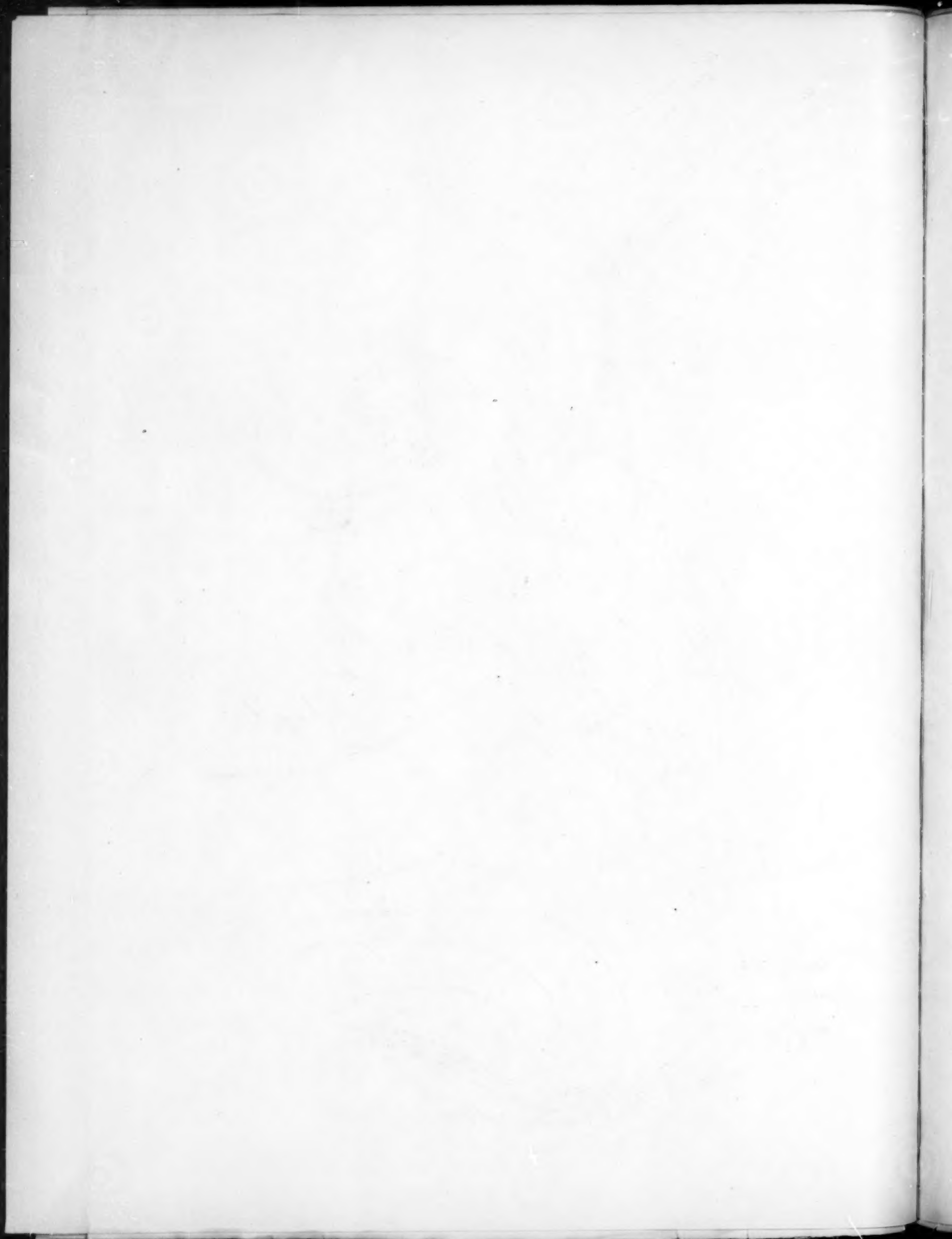


Chart II. Isobars, Isotherms, and Winds. August, 1892.





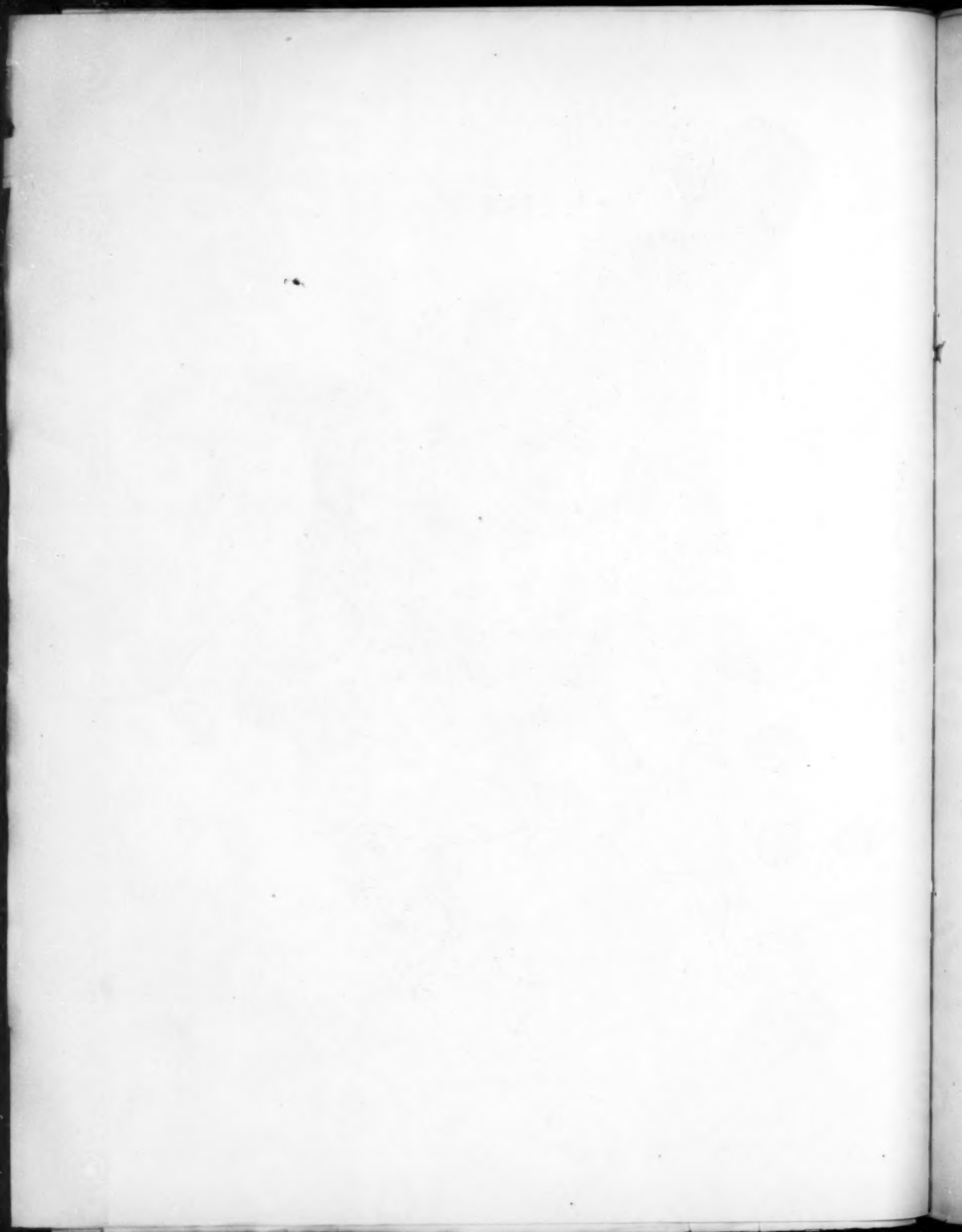
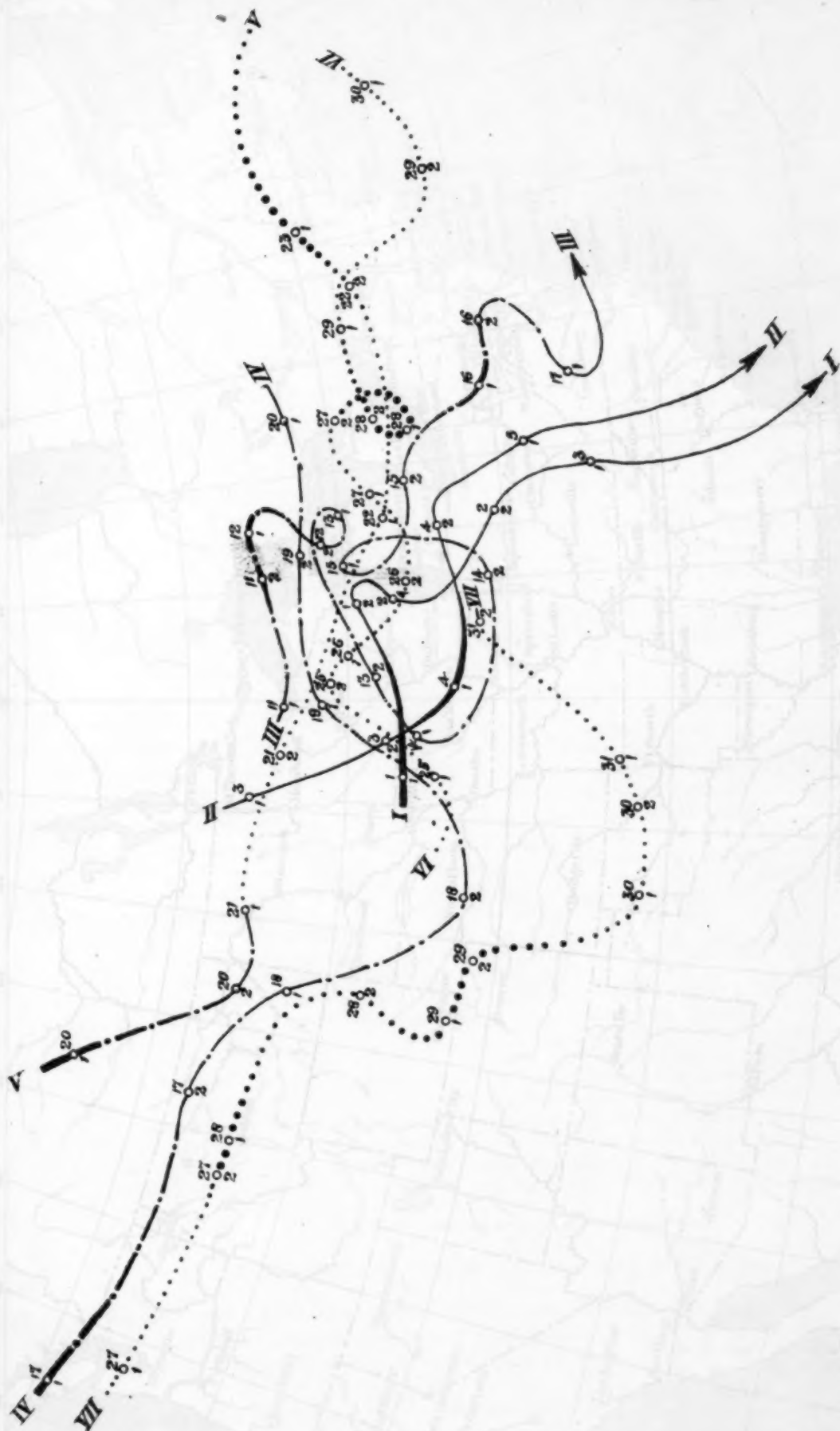


Chart IV. Tracks of areas of High Pressure. August, 1892.



U. S. DEPARTMENT OF AGRICULTURE
 Weather Service
 WASHINGTON, D. C.
 Published by Authority of the Secretary of Agriculture
 Observations for the Weather Service are
 taken at 11 A. M. and 5 P. M. daily.

NOTES.
 — Tracks of first decade of month.
 - - - Tracks of second decade of month.
 Tracks from 21st to 31st, inclusive.
 The heavy portion of tracks indicates where the highest pressure was observed.